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Health Care Reform in Vermont and its Implications for Systems of Care for Children

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Vermont Department of Health

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Prepared under contract with:

U.S. Department of Health & Human Services
Public Health Service



Health Resources & Services Administration
Maternal & Child Health Bureau
Contract No.: 240-92-0059

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Acknowledgments

The authors would like to extend their sincere appreciation to the many Vermont officials who provided assistance in the development of this report. Specifically, many thanks to Jan Carney, State Commissioner of Health; Christine Finley, Deputy Commissioner; Stefan Rosenstreich, Paula Duncan, Ellen Thompson, Carol Hassler, Nancy Frank, Mary Ann Klimas, and Bruce Post of Public Health Policy and Analysis in the Department of Health; Patricia Berry of Local Health; Carol Hassler of Children with Special Health Needs; Tommy Ivey and Catherine Lavigne of Dental Health; Mary Smith of the Department of Social Welfare; Judy Wexler of Planned Parenthood of Northern New England; Sara Simpson of the Department of Education; Cheryl Mitchell, Deputy Secretary for the Vermont Agency of Human Services; and Rachel Block and John Dick of the Vermont Health Care Authority.

I. Introduction

Effective October 1, 1992, the Maternal and Child Health Bureau (MCHB) of the U.S. Public Health Service awarded a three-year contract to Health Systems Research, Inc. (HSR) to provide technical assistance to states as they develop comprehensive systems of primary health care for infants, children, and their families. Under the project, states are invited by the MCHB to develop and submit requests for assistance on projects integral to their primary care systems development efforts. Over the course of the three years, a total of twenty-five states will be chosen to receive technical assistance from HSR.

During the winter of 1992-93, thirty-two states submitted requests for technical assistance to HSR. The State of Vermont was one of six states selected to receive technical assistance during the first project year.¹

A. Vermont's Request for Technical Assistance

On April 25, 1992, the Vermont General Assembly passed Act 160, establishing the framework for health care reform in Vermont. The Act authorized the creation of the Vermont Health Care Authority (HCA), a three-person board appointed by the Governor and charged with designing two options for reform, one based on a single-payer model and the other using multiple payers. Both plans, however, are to contain several common features: cost containment through use of a unified health care budget, a centralized system of health care planning, and implementation of integrated systems of care to provide a uniform package of health care benefits for all Vermonters. Act 160 required the HCA to propose its two options to the legislature by November 1, 1993.

As the Health Care Authority drafted its alternative plans for reforming the state's health care financing and delivery systems, Vermont Maternal and Child Health (MCH) officials requested

¹ Additional states chosen to receive technical assistance during the first project year were: Delaware, Indiana, New Mexico, Washington, and Wyoming.

assistance in examining their program's role in the context of health care reform. Specifically, they asked for help in identifying policy options that build upon the strengths of the primary health care system for children and that will help ensure that systems of care for children, especially children at risk of or possessing special health care needs, evolve in a positive and effective direction.

B. Technical Assistance Process to Date

Based on this request and after several conference calls with Vermont officials, the HSR technical assistance team conducted an initial site visit to the State on June 10-11, 1993. The objectives of the site visit were as follows:

- To gather detailed contextual information on the existing primary care system for children in Vermont;
- To obtain state officials' input on the strengths and weaknesses of existing systems of care for children and to identify which aspects of these systems should be preserved and/or enhanced under health care reform; and
- To develop a list of project tasks, a work plan, and preliminary timeframes for completion of the assignment.

During the site visit, the consulting team accomplished these objectives through a series of meetings with state officials from several agencies, including the Department of Health (DOH), the Department of Social Welfare (DSW), the Department of Education (DOE), and the Vermont Health Care Authority. On August 25, 1993, HSR completed and submitted to Vermont MCH officials and the MCHB a report summarizing the content and outcome of the site visit and outlining a workplan for subsequent technical assistance activities.

At the conclusion of the site visit, participants agreed on the objectives of the consultancy, a preliminary workplan, and a timetable for completion of the technical assistance assignment. Given the HCA's schedule to present its proposals for health care reform to the General Assembly by November 1, 1993, HSR proposed to Vermont MCH officials a two-step process for its remaining activities:

- First, to coincide with the HCA's November deadline, HSR would develop a preliminary report analyzing the proposals of the Health Care Authority with respect to the impact that health care reform may have on primary care systems for children. This report would identify the key questions raised by the work of the HCA and discuss a range of issues regarding children's access to needed care that might require further analysis.
- Based on the direction of health care reform in Vermont in both the executive and legislative branches, HSR would develop a second report providing a more detailed analysis of a set of strategies for improving the delivery and financing of primary care services to children.

This document represents the first of the two reports described above. A preliminary draft of this report was submitted to Vermont officials on October 29, 1993. Vermont officials reviewed the draft and provided HSR with feedback in late February 1994. This final report incorporates their comments and suggestions. The second report will be developed after the close of the 1994 legislative session and will incorporate the results of legislators' decisions regarding health care reform.

C. The Organization of this Report

To provide a context for discussion, Section II of this report describes Vermont's current systems for delivering and financing primary health care services for children. Specifically, the section provides a brief overview and description of existing public programs for children, discusses the strengths and weaknesses of existing systems, and summarizes Vermont children's unmet needs.

The third section of the report begins with a summary of the mission of the HCA and its proposal to the State legislature: *Universal Access Plans*. It then discusses many of the key questions raised by the HCA's health care reform proposal with respect to ensuring children's access to care under a reformed system.² This first report is not intended to answer these

² The report also includes a review of the literature regarding the effectiveness and cost-effectiveness of non-medical, psychosocial support services for children and pregnant women, which can be found in Appendix A.

questions nor does it present a range of specific policy options to address them. Rather, HSR will consult with Vermont Department of Health officials to determine which subset of questions discussed in the report require further analysis, and then develop a second follow-up report that will analyze in more detail the implications and potential policy responses to these selected questions.

II. Vermont's Current System for Delivering and Financing Health Care Services for Children

Before analyzing the proposals for health care reform set forth by the Health Care Authority and the impact they may have on systems of care for children, it is important to understand the current configuration of these systems. Therefore, the discussion presented below first provides an overview of existing public programs for children administered by the Vermont Department of Health (DOH). Next, it considers the overall strengths and weaknesses of health care financing and delivery systems for children in the state. Finally, this section concludes with a summary of what appear to be the major unmet health needs of children living in Vermont.

A. Inventory of Existing Public Health Programs for Children

As will be discussed below, the majority of personal health care services in Vermont are provided through the private sector. However, the Vermont Department of Health (DOH) plays a critical complementary role, operating a variety of programs and services for infants, children, and adolescents through its Local Health and Children with Special Health Needs (CSHN) divisions. Although these programs include both direct service delivery and population-based educational and epidemiological efforts, this section focuses on the services provided directly by the public sector (and complements the Health Care Authority's 1993 Health Resources Management Plan and Universal Access Plan which describe in detail the

types and distribution of private providers practicing in Vermont). Discussed below are services both medical and supportive in nature.³

1. Medical Care Services

Medical services provided either directly by or under contract with DOH include obstetrical, well-child, family planning, and children's specialty services, including genetics services, newborn screening, immunizations, and lead screening.

- ***Comprehensive Obstetrical Services.*** Administered under contract by University Associates in Obstetrics and Gynecology in Burlington, Comprehensive Obstetrical Services is the state's only public-sector obstetrical program. It provided maternity care services to 200 adolescents and uninsured women in northwestern Vermont in 1992. Services include clinical care and risk assessment, WIC and other nutrition services, nursing assessment and health education, social and support services, and postpartum and family planning services, using a multi-disciplinary health care team.

In all other areas of the state, obstetrical medical services are provided by private providers. In FY 1992, 31% of pregnant women had their prenatal care paid for by Medicaid insurance. Public Health nurses (and Home Health Agency nurses in two parts of the state) provide community-based support services to these pregnant women and their families (see below).

- ***Well-Child Clinics.*** For children not enrolled in Medicaid, DOH uses Title V funds to provide well-child clinics for children whose access to physician care is restricted by inadequate insurance coverage and limited financial resources. Priority is given to children age two and under. The clinics provide primary care and preventive services, including age-appropriate developmental, speech, hearing, and vision screening; hematocrits; measurements and blood pressure tests; physical assessment and examinations; and immunizations. Health education, teaching and counseling, and anticipatory guidance are an integral part of services. Case management, follow-up, and referrals are provided as needed for identified concerns, problems, or conditions. Effective October 1, 1992, in compliance with CDC recommendations, clinic services also include lead screening.

³ The discussion presented here draws extensively from materials provided by the Vermont Department of Health, including data from the States' FY 1992 Title V Annual Report.

Well-child clinics provided nearly 700 visits to 350 infants under age one, and 1,700 visits to 1,150 children between the ages of 1 and 21 in FY 1992, in 11 of the 12 local health offices across Vermont, with a budget of approximately \$118,000. Immunization clinics are also held.

- ***Family Planning Programs.*** Publicly-funded family planning services in Vermont are contracted to Planned Parenthood of Northern New England, which provides services through 15 clinics statewide. Family planning services include pregnancy testing and dating, contraceptive prescription and counseling, health screening, fertility-related counseling, and community education. With a budget of slightly more than \$800,000 (roughly \$200,000 in state funds and \$600,000 in Federal Title X funds), family planning clinics served over 16,000 individuals in Vermont in FY 1992.
- ***Children's Specialty Services.*** Vermont has an extensive program for Children with Special Health Needs available to all residents regardless of income. The program is designed to cover handicapping conditions such as genetic disorders, complications of premature birth and other perinatal conditions, trauma, and environmental problems. Approximately 3,700 children received services through the Division of CSHN in FY 1992 through the specific services described below. The total budget of roughly \$2.4 million supports all personal health care services provided by this Division, of which about \$620,000 is dedicated to the purchase of specialized medical care, authorized by the Division and not fully reimbursed by third party coverage and \$220,000 funds specialists to attend clinics in addition to CSHN clinical staff.

The Division of CSHN also provides a wide variety specialty clinics for children with particular needs. These include the Children's Orthopedic Service (in which 200 clinics were held in FY 1991), seating clinics for children with physical disabilities, a cleft lip/palate clinic (offered ten times in FY 1992), a hearing impairment program, a metabolic clinic, a cystic fibrosis program, a weekly epilepsy clinic, a weekly cardiology clinic, a juvenile rheumatoid arthritis clinic, and a program for the families of infants using apnea monitors.

The Child Development Clinic (CDC) is the only Vermont-based provider of comprehensive developmental pediatric services. CDC staff hold clinics in eight communities around the state, serving children from birth to age eight. Clinic visits often include conferences with a child's community providers, including school teams. CDC focuses on the early diagnosis and evaluation of suspected developmental delay or disability and referral to appropriate community services. While most services are provided directly by CDC staff, CDC also finances certain additional diagnostic and treatment services prescribed by CDC staff when these are not covered by the family's insurance. For these services, some families will also be subject to a co-payment, based on

family size and income. A total of nearly 1,800 children received screening and evaluation services from the Child Development Clinic in FY 1992.

- **Genetics Services.** Through a contract with the Vermont Regional Genetics Center, prenatal counseling and genetics/dysmorphology evaluations are offered to all Vermont pregnant women and children who need them. Nearly 600 women received prenatal genetic services, and the pregnancy risk information service handled 1,483 calls.
- **Newborn Screening Program.** Through contracts with University Pediatrics of Burlington and the Massachusetts Health Research Institute, 99% of Vermont newborns are screened each year.
- **Lead Screening.** Local Health has provided lead screening services to children, and DOH has received a grant to hold free screening clinics in targeted high-risk communities around the state in 1994.

2. Support Services

In addition to medical services, DOH and the Department of Social Welfare, the state Medicaid agency, provide a number of support services to eligible families, as described below.

- **EPSDT Outreach.** "Partners in Health" is Vermont's Early and Periodic Screening, Diagnosis and Treatment (EPSDT) program, operated by the Division of Local Health under an interagency agreement with the Department of Social Welfare. To assist the Medicaid agency, DOH's 12 Local Health Offices perform the outreach function of EPSDT in accordance with federal requirements. Services provided by public health staff, either in person or in writing, include: education on preventive health care and age-appropriate health screening; assistance with scheduling medical, dental, and other health-related appointments; assistance in locating a physician, dentist, or other health specialist who accepts Medicaid; provision of information about and referral to available and appropriate community resources; assistance with transportation to appointments; and follow-up to assure that appropriate screening, follow-up and treatment are obtained.

Partners in Health serves all Medicaid-eligible children under 21 in Vermont. During FY 1992, 15,417 visits were made to 6,715 children under 21. In addition, 2,484 pregnant women over age 20 received one home visit about EPSDT services for their unborn child. There were, therefore, a total of 17, 901 visits for 9,199 children. Written outreach information was sent to all eligible individuals.

- **WIC.** The WIC program provides supplemental foods and nutrition counseling as an adjunct to health care as well as screening and referral for other programs and services such as immunization and Medicaid. Enrolled participants receive weekly home delivery of foods, tailored to their particular needs and eligibility factors, through contracts with local vendors. Nutrition education, including risk assessment for premature heart disease and education regarding risk reduction, diet and exercise is offered at least twice during the client's six-month certification period. Individuals with specific nutrition-related concerns receive additional services from nutritionists or other staff members. WIC and other Local Health program clients also receive health promotion services, including counseling and education on injury prevention.

The WIC program serves pregnant, postpartum, and breastfeeding women and infants; and children under five. Priority enrollment is reserved for pregnant women, infants, and women and children with medical risk factors. The FY 1992 food budget was \$5.59 million and the nutritional services and administration budget was \$2.11 million. The FY 1993 food budget was \$6.22 million and NSA was \$2.31 million.

- ***Case Management and Care Coordination Programs.*** Case management and care coordination services are also provided to a variety of high-risk populations, as described below.
 - The Teen System of Care program provides public health nursing and case management services to all pregnant women aged 17 or younger. These services include education and counseling regarding health care resources, psychosocial issues, maternal changes, fetal development, nutrition, medications, substance use and abuse, educational and vocational resources, preparation for childbirth and parenthood, physical assessment, and community resources to meet identified needs. During the last fiscal year, 82% of the eligible population were enrolled in the System of Care.
 - Local Health staff also provide home visits and case management services to pregnant women, most of whom enroll through the prenatal risk assessment segment of the initial WIC clinic appointment. In FY 1992, just over 4,200 visits were made to approximately 1,600 women, representing approximately 25% of women who give birth in Vermont each year.
 - In addition to the babies visited under Partners in Health (EPSDT), 50 infants' families received home visiting services from Local Health staff to assess possible risks of preventable health conditions or developmental delays due to parental substance abuse, failure to thrive, or other medical problems.

- The Division of Local Health also provides services to high-risk infants and children from birth through age 21 tailored to their individual needs as staffing allows. Services include periodic assessment of the child's physical, nutritional, emotional, and developmental status; monitoring of status and progress; counseling, education, and anticipatory guidance regarding growth and development, nutrition, infant and child care, child-rearing practices, and parenting skills. Referral to other community resources is provided as needed. Clients are identified through WIC, well-child clinics, and prenatal programs, as well as by referral from other community providers.
- The Division for Children with Special Health Needs also provides service coordination. Nurse coordinators and medical social workers in four regional offices provide coordination of varying levels of intensity to children enrolled in CSHN programs.

3. Comprehensive, Community-Based Integrated Systems of Care for Children

Several additional programs exist to coordinate services for particular populations, as described below.

- ***Healthy Babies.*** In four pilot communities, this program will provide Medicaid funding to community-based coalitions (Health Departments, Home Health Agencies, Parent-Child Centers, hospital nursery staff and health care providers) to deliver enhanced prenatal, postpartum and family support services.
- ***"Success by Six."*** This is an Agency of Human Services/Department of Education collaboration to support families to promote the health and school readiness of all young Vermonters. Community-based initiatives are currently in operation in eleven communities. Part H is considered part of the Success by Six initiative in Vermont. AHS is the co-lead agency with the DOE. Much of the administrative effort lies within the CSHN Division. In this role, the division supports communities in developing and implementing programs of early intervention services for infants and toddlers with developmental disabilities or with conditions that place them at risk of developmental delays. In FY 1993, Part H services were piloted in five of the state's 12 regions; statewide implementation will begin in 1994.
- ***AHS/DOE School/Community Partnership for School-Aged Children and Adolescents.*** This program provides EPSDT funding for school health programs and IEP services piloted in 14 areas. The Carnegie Middle Grades Program is active in three communities linking health and human services in the community to the schools. The Department's State Systems Development

Initiative (SSDI) project will help three additional communities perform community assessment with a goal of ensuring an integrated system of care for children, including those with special health needs.

B. Strengths and Weaknesses of Current Health Programs for Vermont Children

Vermont is among the nation's leaders for its low rates of infant mortality and low birthweight births and high rates of children's immunizations, entry into prenatal care, and participation in WIC (Vermont Department of Health, 1992). These excellent health status indicators can be attributed, in part, to a higher-than-average education level among mothers in the state and a large proportion of low income children covered by public and private health insurance (Vermont Agency for Human Services, 1993). But they are also the result of a strong partnership between public and private sector health care providers.

The sections that follow discuss these strengths as well as the weaknesses of existing health care systems for children. As future health care reform activities proceed, Vermont policymakers will want to build on the strong foundation already in place, while also addressing deficiencies in the current child health care system.

1. Strengths of Vermont's Child Health Care Systems

The State of Vermont currently boasts one of this country's strongest and most diversified systems of primary health care for children. The discussion presented below outlines the numerous strengths of this system.

- ***Broad Financial Access to Care.*** The Vermont Medicaid program has always been one of the most generous in the country with regard to income eligibility limits and benefit coverage. Financial access was further expanded in 1989 when the Dr. Dynasaur program was created, extending coverage to children under the age of 7 in families with incomes below 225 percent of the federal poverty level and to pregnant women with incomes under 200 percent of poverty. Originally a state funded program, Dr. Dynasaur was folded into

Medicaid in 1992⁴ and, bolstered by additional federal matching dollars, expanded to cover all children under age 18 living below 225 percent of poverty (Hill, 1993). Medicaid coverage is also available to some children with severe disabilities through the Disabled Children's Home Care Program (an optional service under TEFRA) and waiver programs in the Department of Mental Health and Mental Retardation.

- ***Private Sector Involvement.*** Unlike low income children in many states who have difficulty obtaining care from private providers, Vermont children have good access to doctors. Private physicians provide roughly 95 percent of primary care services consumed by children and 90 percent of their immunizations. In fact, as the Medicaid/Dr. Dynasaur program has been expanded and greater numbers of lower income children have gained access to private providers, DOH has been able to phase out many of its "well child" clinics. Most families newly eligible for Medicaid report to public health staff performing EPSDT outreach that they already have a primary care physician. Two-thirds of the children under age one in these families also are found to be appropriately immunized. In 1993, over one-third (37 percent) of the state's 43,000 children eligible for Medicaid saw a dentist at least once (DOH, 1993).

All pediatricians, most family practitioners, and more than 80 percent of the state's dentists accept Medicaid/Dr. Dynasaur patients (DOH, 1993). Unlike their colleagues in many states, these providers have been relatively satisfied with their participation in the state's Medicaid program.

- ***Public/Private Partnership.*** Partly because private providers play such an active role in the care of low-income children, the Department of Health has been able to focus much of its attention and resources on serving children with special health needs, as well as providing assessment, case management, and referral services to other low-income families. Through both of these activities DOH staff have created strong partnerships between public health nurses and physicians in many communities throughout the state. Examples of such collaboration are described below.

- As previously discussed, nurses, health outreach specialists and nutritionists in DOH's twelve local offices conduct EPSDT outreach to families newly eligible for Medicaid, informing them of the benefits available under the program and assisting them with arranging appointments with primary care physicians. For about 20 percent of these families, outreach is conducted in the family's home. Public

⁴ To complete this expansion in July 1992, Vermont policymakers took advantage of a new opportunity presented by Section 1902(r)(2) of the Social Security Act, which allows states to employ more liberal methods for disregarding family income and assets for purposes of expanding Medicaid eligibility.

health nurses will also act as case managers for children needing more advanced diagnosis and treatment.

- Public health nurses and nutritionists provide pregnant women with prenatal and postpartum skilled nursing and social services, such as counseling and referral to community resources. Under the state's new "Healthy Babies" program, home visiting services will be provided by other community agencies, such as home health agencies and parent-child centers, and services will be coordinated by DOH.
- Finally, the department's social workers also have, in some cases, provided a critical link between primary care providers and various specialist physicians serving children with special health needs by providing service coordination.

Pediatricians, family practitioners, and obstetricians apparently have welcomed the support they receive from public health nurses, medical social workers, and nutritionists. For example, most accept the results of screening tests performed by nurses during the EPSDT exam. Most will also refer to public health nurses and social workers patients who need social services. In fact, according to state officials, many would like to receive even more social services assistance for children with special health care needs.

- ***Public Health Linkages with Social Service Programs.*** In many communities, especially in rural areas of the state, physicians' willingness to utilize public health nurses and social workers as case managers for families with multiple health and social needs is a key strength of Vermont's current system. To the extent this happens, such collaboration could be a strength upon which the Health Care Authority may want to build as it designs Integrated Systems of Care to meet the needs of lower income disadvantaged families. Staff at the Department of Health describe case management as the "glue" that binds together myriad health and social services programs -- the mechanism to create a "system" out of a series of often disconnected activities with different eligibility standards, funding sources, and delivery systems.

As described above, several new state initiatives are working to create more integrated systems through case management, including: "Success by Six," which focuses on meeting the needs of young families for parenting skills, vocational training, education, and health care; and "Healthy Babies," designed to provide enhanced pre-and post-natal nursing, counseling, and parenting services to high-risk families. These pilot projects could serve as a model for a maternity benefit under the state's universal access program. Additionally, the Part H program, which is in its first full year of implementation in 1994, entitles all eligible children under three years of age to service coordination.

2. Improvements Needed in Vermont's Child Health Care Delivery System

Despite its many advantages, some aspects of the state's programs for delivering care to lower income children could be improved.

- ***Provider Availability.*** Like all rural states, Vermont faces a shortage of primary care practitioners in over a dozen communities (Vermont Health Care Authority, 1993). Eight areas have been designated by the U.S. Public Health Service as "Health Professional Shortage Areas." In addition, two counties are designated as dental shortage areas.

Even in areas that currently have providers of primary and maternity care, the supply is in a delicate balance, where retirement or relocation of a family practitioner or obstetrician could leave a community unserved (University of Vermont, 1993). State officials report that recruitment has been difficult in Vermont, an experience similar to that of other rural states. Geographic isolation restricts opportunities for practitioners and their families; there is less specialist physician back-up, hospitals are less well-equipped, and the small size of rural practices limits income potential and the ability to share practice responsibilities. While state law currently permits appropriately trained nurses to practice independently (and extends to them prescribing authority), all nurses' charts must be reviewed regularly by a physician (Nurse Practitioner, 1993). State law also requires physician assistants to practice under direct physician supervision. The University of Vermont's College of Medicine reports problems for rural practitioners similar to those in other states. For example, geographic accessibility is a problem for some Vermonters; in its Health Resource Management Plan, the Health Care Authority suggested that no residents should be more than a thirty-minute drive away from a primary care provider (HCA, 1993).

- ***Distribution of Patients Among Providers.*** While almost all primary care physicians and dentists participate in Medicaid/Dr. Dynasaur, publicly-funded patients are not equally distributed among them. For example, only 12 percent of the state's dentists care for half of publicly-financed patients (DOH, 1993).

Furthermore, DOH and Medicaid staff who work with these providers have observed growing reluctance to continue the tradition of public program participation. As the proportion of their practices that is public has grown (particularly since the implementation of Medicaid/Dr. Dynasaur expansions), some physicians and dentists have raised concerns about fee levels. And some who do not express concern about fees do object to the fact that many families now covered by Medicaid/Dr. Dynasaur used to pay something toward the cost of their care when they were uninsured. With Medicaid coverage, they are now required to pay nothing. In addition, anecdotal evidence suggests that some

middle-income families who possessed limited health insurance have dropped their private coverage when their children became financially eligible for Medicaid (Vermont Chapter/American Academy of Pediatrics, 1993).

Concern about appropriate payment levels, acknowledged as a problem in the Authority's November report, and the need for a fair family contribution can threaten the state's exemplary rate of public program participation. This situation also provides a caution to the Health Care Authority as it designs the state's new program and its levels of subsidy for low-income families.

- ***EPSDT Follow-Up.*** Although DOH staff presume that most children referred for further diagnosis or treatment of conditions discovered through EPSDT screening receive the care they needed, they have no formal system to track referrals and verify this presumption. They hope that Medicaid's new contract with Electronic Data Systems (EDS) to develop a new management information system (MIS) will provide a means to monitor specific referrals and also patterns of care for selected groups of children.
- ***Primary Care Physicians and Children with Special Health Needs.*** As discussed above, Vermont has a well-developed program for children with special health needs available to all residents regardless of income. However, DOH staff agree with the Health Care Authority that a weakness of this program is its difficulty with systematic coordination between a child's primary care physician, his or her specialist physicians (especially those out of state), ancillary providers (physical, occupational, and speech therapists, equipment suppliers, and laboratories) and a complex array of funding sources. Such coordination is one goal of the new initiative to develop community-based systems of care for young children with special needs (developed under Part H of P.L. 99-457). The Integrated Systems of Care envisioned under a reformed health care system could provide a strong incentive to improve coordination between primary care and specialty care for such children.

3. Conclusion

Vermont's system of financing and delivering care to children brings several strengths to the discussion of health care reform. Delivery systems already rely extensively on private providers but use public health staff and other community-based providers in mutually acceptable and reinforcing partnerships to provide:

- Assessment and identification of social and health needs (particularly for families facing special risks);

- Nursing, nutrition and social work services for needs that can be met by public health, home health and parent-child center staff; and
- Referral and follow-up to both physician and other community-based health and social services for a variety of children including those with particularly severe health needs and those with routine medical needs but who live in families with increased social or health risks.

Throughout Vermont, most children have access to a system of care that is anchored by private physicians and facilitated and augmented by public health, home health and parent-child center staff. Perhaps more than in many states, physicians have both recognized the needs of families with children with special health needs and lower income disadvantaged families for social and health-related support services and come to rely on DOH staff and other community-based support staff for these services. It seems appropriate to build on this strength in designing health care benefits for children and creating integrated delivery systems.

C. Overview of Unmet Needs of Vermont Children and Families

Nevertheless, not *all* families or children are currently well served by existing systems of care. For example, low-income/high-risk families with infants, children with special health care needs, and adolescents often do not receive all of the types of care they need. Recognizing the need to improve coordination in certain programs, DOH is working to monitor EPSDT referrals and is developing two community-level initiatives (“Healthy Babies” and “Success by Six”). It will be important to evaluate the experiences of these efforts over the next several years as the state begins to facilitate the development of Integrated Systems of Care. Bringing high-risk families and adolescents into a broad-scale delivery system and integrating primary and specialty care for children with special health care needs will remain particular challenges under health care reform.

- **Adolescent Health.** Adolescents often require an array of health and health-related services beyond those required by younger children. For example, many adolescents need family planning, sexually-transmitted disease care, emotional counseling, substance abuse counseling and treatment, and overall assistance in minimizing health risks and starting a lifetime of good health habits. Yet in Vermont, as across the country, adolescents have been found to be a difficult

population to serve, often feeling alienated from the health care system and, in particular, their family providers.

Delivering some services in the school setting and using the schools as a coordinating site appears to be a viable strategy for reaching adolescents. Currently, Vermont schools are served by nurses who play an active role in direct care, health education, and community health. However, there are no comprehensive adolescent school health clinics. The state has recently received a planning grant from the Robert Wood Johnson Foundation to develop school-based health services in Vermont communities that would like them.

As discussed, DOH contracts with Planned Parenthood of Northern New England to provide family planning services in 15 sites throughout the state. One-quarter of Planned Parenthood's caseload is made up of adolescents, and the agency estimates that it sees 29 percent of all Vermont teenage girls and about 59 percent of those at risk of pregnancy. Although not a full-service primary care provider, Planned Parenthood has become the entry point to the medical care system for many adolescents because it provides accessible, affordable, and confidential services and is able to refer its clients to other sources of primary care. The widespread existence of family planning services may be one reason that teen pregnancy and fertility rates declined in Vermont over the last decade (Vermont Agency for Human Services, 1993).

While Planned Parenthood and school nurses play an important role in serving adolescents, most public and non-profit agency staff agree that the state needs to further assess the needs of and improve its services for this population.

- ***Support Services for High-Risk Families.*** Like their counterparts throughout the country, members of low-income Vermont families face multiple challenges. They not only have fewer financial resources; they also often have less education contributing to limited employment opportunities and poor parenting skills. In too many families, violence, substance abuse, and other forces stress their ability to function responsibly. Adding young children to these families can exacerbate stress. Many low-income families could benefit from receiving social support services such as case management, parenting education, counseling, and literacy programs.

As discussed, DOH currently provides such psychosocial support to many families, but its capacity is limited. For example, public health nurses conducting EPSDT outreach are able to make only one or two home visits to just 20 percent of families newly eligible for Medicaid. However, DOH staff estimate that at least one-third of these families could benefit from home visiting and many need intensive support from mental health and other community social services. Already overburdened community mental health centers are currently unable to make home visits to these families. Further, the

Health Care Authority's Health Resources Management Plan suggests that, due to limited numbers of community mental health centers in several parts of the state, there is probably a general unmet need for mental health care for severely emotionally disturbed children.

- ***Special Health Needs.*** The state's program for Children with Special Health Needs provides services to many young residents with disabling conditions. In fact, the Health Care Authority has estimated that, based on national data, CSHN currently serves a large majority of these children. However, staff at the Vermont Medical Society believe that many children with these needs are not served by public or private programs (HCA, 1993).

The CSHN program is further constrained by its categorical nature. For example, except for service coordination and respite care, it does not include among eligible children those with chronic conditions such as diabetes and asthma or acute conditions such as AIDS or cancer. A new state universal health care program should consider how best to meet the needs of children with the entire spectrum of chronic or long-term acute conditions.

- ***Dental Care.*** Almost half of Vermont's children see a dentist once a year, but more should be encouraged to do so. Although most dentists participate in Medicaid, many limit the proportion of publicly-funded patients they will accept, and finding a dentist often requires persistence on the part of families. Preventive and therapeutic dental care for children is important to overall health and should be part of a children's health care benefit package, as recommended by the Health Care Authority. Dental staff at DOH suggested that increased access to dental sealants (already obtained by 30 percent of the state's school children) would substantially decrease the risk of caries and could be inexpensively applied by hygienists at schools. At the present time, however, no schools have dental hygienists either on staff or rotating through the schools.
- ***Year 2000 Goals and Healthy Vermonters 2000.*** Overall, Vermont is far ahead of most states in reaching the U.S. Surgeon General's health goals for the Year 2000. In their Healthy Vermonters 2000 objectives, the state has identified several areas where they have not yet achieved these goals, including the following:

- Increase from 84 percent to 90 percent the proportion of children immunized under age two;
- Increase from 82 percent to 90 percent the proportion of pregnant women receiving prenatal care in the first trimester;
- Reduce from 5.3 percent to 5 percent the proportion of low birthweight births;

- Reduce from 24 percent to 15 percent the number of people under age 20 who start smoking;
- Reduce the proportion of children aged 12 to 17 who use alcohol (from 39 percent to 12.6 percent) and marijuana (from 10 percent to 3.2 percent);
- Increase to 90 percent (from an unknown level) the proportion of children receiving recommended primary health services;
- Reduce to 10 percent (from an unknown level) the proportion of children with elevated lead levels; and
- Increase to 75 percent (from an unknown level) the proportion of sexually active teenagers using condoms (DOH, 1992).

III. Implications of Health Care Reform for Children's Health Care

While the federal government debates alternative approaches to reforming this country's health care system, many states across the country have aggressively moved ahead with health care reform initiatives of their own. Vermont, under the auspices of Act 160 and the Health Care Authority, has assumed such a leadership role.

This section of the report presents an overview of the mission and work completed to date by the HCA, followed by a detailed discussion of the key policy questions regarding children's health raised by the HCA's proposal to the General Assembly.

A. The Vermont Health Care Authority -- Mission and Report to the Legislature

As previously noted, the Vermont General Assembly passed Act 160 in the spring of 1992 establishing the Vermont Health Care Authority and charging it with designing two options for reform, one based on a single-payer model and the other using multiple payers. In undertaking this analysis, the HCA has obtained input from the full spectrum of individuals and groups working in or affected by the health care system, including private providers, public program officials, consumers, and members of the business community.

As required by law, the HCA presented its two proposals to the General Assembly on November 1, 1993 in a report entitled "Universal Access Plans." The legislature is currently considering a variety of ways to implement a universal health care program. At this writing, one bill has passed the state House of Representatives, but no decisions have yet been made by the Senate. Therefore, this chapter will use the report of the Health Care Authority as a framework for analysis, recognizing that the details of health care reform in Vermont may change as proposals are considered by the legislature.

This section summarizes the November 1 report, paying particular attention to concerns it raises regarding primary health care for children and families. This discussion will consider several of the key components of the HCA's proposals, including: Integrated Systems of Care; the Uniform Benefit Plan, organization and financing of care; and administration and implementation.

1. Integrated Systems of Care

Whichever financing system the legislature chooses, the Authority envisions a new health care delivery system based on Integrated Systems of Care (ISCs). ISCs are to be vehicles for improved access, efficiency, quality, and personal health status. The ISCs are also expected to facilitate consumers' choice and decision-making, and to make the entire health care system more accountable and cost-effective.

An ISC will encompass a network of health care providers and facilities organized under one management structure. Although it is uncertain whether there may be more than one ISC in each region of the state, each Vermont resident will be free to choose an ISC and, within that framework, to choose a primary care provider. Consumers may change ISCs during an annual enrollment period and at other times under special circumstances. Each ISC will be required to accept all persons who choose to enroll; they will not be allowed to discriminate on the basis of race, sex, sexual orientation, pre-existing condition, employment status or any other criterion.

Each ISC will be governed by a Board of Directors that includes members of the public and representatives of providers, administrators, and facilities. The Board will be responsible for liability, quality assurance, access to care, and coordination of services. The ISCs will be overseen and certified by the Health Care Authority itself. Criteria for certification will include:

- The capacity to provide the full Uniform Benefit Plan (discussed below) to all enrollees, with a network of providers that is large enough to allow for choice on the part of consumers;
- The existence of a data system to identify the community's health needs and monitor the utilization and quality of care;
- The ability to provide geographically-accessible services, guaranteed enrollment without discrimination, as well as confidentiality and quality assurance;
- The financial solvency to assume the risk for all enrollees' health care;
- A grievance procedure to address enrollees' complaints; and
- A system for health education and prevention for the system's participants.

Other administrative structures may also be established to facilitate the work of the ISCs, for example, an ISC Council made up of representatives of each of the ISCs. The Council would address system-wide issues, facilitate the health promotion and disease prevention functions of the ISCs, promote collaboration across the state and help the ISCs to share ideas and innovations. In addition, the Council might provide a structure for a system of joint reinsurance, in case any particular ISCs were found to cover a disproportionate share of high-risk enrollees. The Authority will also seek to establish a Resource Center to assist in the formation of the ISCs, provide ongoing technical assistance to the ISCs to improve their efficiency and effectiveness, develop training programs, and support the improvement of Vermonters' health status.

2. Model Uniform Benefit Plan

The uniform benefit plan proposed in the report is intended to provide universal access to medically necessary and preventive health care. The benefit plan is based on coverage commonly provided by the health plans currently offered in Vermont and on the needs of most Vermonters. However, the Authority recognizes that some of the state's residents will have special needs that go beyond this typical plan and may provide for supplemental services for those populations.

The benefit plan is based on several principles: that consumers should be free to choose the ISC in which they enroll, and, within each ISC, to choose their primary care provider; that the system must emphasize prevention, of both personal preventive health services (such as immunizations and mammography) and population-based health promotion (such as reducing the incidence of drunk driving); and that the system should emphasize primary care, encouraging enrollees to obtain referrals for specialty services from their primary-care provider. The plans may use mid-level practitioners where appropriate.

All of the services in the benefit package will be available through the ISC, although the system may contract with outside providers for mental health and substance abuse treatment services. Enrollees will have three plans from which to choose: the "in-network" plan, in which enrollees use ISC providers exclusively, with minimal levels of cost-sharing; a "point-of-service" plan, in which enrollees may use other providers, but will be responsible for deductibles and co-payments when using services outside the ISC; and an "open" plan, in which enrollees may use the providers of their choice, with deductibles and co-payments applied to all services. (Cost-sharing requirements may be waived for low-income individuals, at the discretion of the ISCs.) In the point-of-service and open plans, deductibles would be \$200 for an individual, \$350 for a two-person family, and \$500 per year for a family of three or more. Copayments would be 30% of costs for services received outside the ISC in the point-of-service plan, and 20% for all services in the open plan.

The benefit package proposed by the Authority is quite comprehensive. Specifically, the plan provides:

- 100% coverage for hospital (with a semiprivate room), intensive care, operating room, and ambulatory care services; in-hospital medical and surgical services; ambulance services; skilled nursing facilities; hospice and home care; medically necessary supplies and nutritional supplements; inpatient services for residential drug and alcohol treatment, and certain preventive services;
- Coverage with a \$5 copayment for outpatient surgical services; lab services and x-rays; primary and specialty care; comprehensive dental care for children and emergency services for adults; physical, occupational and speech therapy; outpatient mental health services; vision and hearing care; emergency room services; and chiropractic care; and
- Prescription drugs, with a 20% copayment up to an established maximum; copayments will be waived for low-income persons.
- Finally, an Advisory Committee to the HCA has made recommendations about the phasing-in of coverage for long-term care.

The distribution of providers necessary to provide the services in the benefit package was the subject of the Authority's April 1993 Health Resource Management Plan. In this study, the Authority found that the supply and distribution of health care providers in Vermont were "generally adequate," with the exception of primary care providers, including providers of maternity care. The Authority suggest that the state make a high priority training, recruiting and retaining primary care providers in underserved areas, especially since primary care services play such an important role in the organization of the ISCs. In addition, the Plan expressed the Authority's intention to rely on mid-level practitioners as "essential members of primary care teams."

3. Organization and Financing of Care

The Authority is developing two plans for universal access to health coverage, a single-payer and a regulated multi-payer model. In the single-payer system, each ISC would operate exclusively within its region. In the multi-payer system, ISCs would be allowed to operate in overlapping service areas and would compete for enrollees based on quality and price. In

either case, a new administrative entity, the Health Care Purchasing Trust, would be established as a division of the Health Care Authority for the purpose of eligibility determination, provider payments, subsidy administration, and claims processing. The Trust would also be responsible for paying the ISCs a risk-adjusted capitated rate for each enrollee; the establishment of these rates would take place through a negotiation process between the ISCs and the Authority. The ISCs themselves would be responsible for determining the method and amount of reimbursement for the health care providers in their networks. This single-payer system would be entirely publicly-financed, with funds to come from income taxes, payroll taxes, and other broad-based revenues (such as excise taxes). The multi-payer system would be financed through a combination of public and private sources; employers would be required to pay 80% of the premiums required to cover their employees and 50% to cover their dependents; employees would pay the remainder themselves. The state would subsidize premiums for low-income and unemployed Vermonters and employees of small businesses through increases in excise taxes.

In the multi-payer system, purchasing alliances would supplement the function of the Health Care Purchasing Trust. The Trust would serve as the agency responsible for coverage of certain groups to be designated by the General Assembly, such as those whose insurance is publicly subsidized. The alliances would be private entities, certified by the Authority to act as purchasing agents for groups of consumers (such as those employed by a firm or a group of firms, or those who live in a particular region). The Authority expects that no more than eight alliances would be formed, in order to maximize the purchasing power of each and minimize administrative cost. The Trust would collect premium payments and enrollment information and contract with ISCs to provide services to its members.

4. Administration and Implementation

Along with the requirement of universal health coverage, Act 160 mandated that the Authority establish a Unified Health Care Data Base, an information system that would meet the needs of

the new health care system. The Authority is still in the process of designing this system, obtaining input from public and private health care organizations in Vermont.

Other issues under consideration by the Authority include establishment of a unified health care budget; reviewing the state's Certificate of Need regulations; discussing the responsibilities of the other state agencies involved in the planning and provision of health care services; and considering the particular issues involved in including Medicaid and Medicare beneficiaries in the unified health care system, including federal statutory requirements that will have to be waived in order to provide these populations with the same services as the rest of Vermont's citizens.

B. Key Questions Raised by Health Care Reform

The state's health care reform proposal contemplates enrolling all Vermonters into integrated systems of care that would be responsible for providing a uniform package of benefits to all enrollees. This model is similar in framework to federal proposals and those in many other states. Although it is built upon the concept of integrated managed care systems, such as HMOs, this approach would require new types of vertically integrated delivery arrangements in Vermont, where only one HMO currently operates. It would also require more responsibility on the part of such delivery systems for the health, not just the medical care, of enrollees.

As the Health Care Authority has acknowledged, such integrated care systems hold considerable promise for cost containment, access, and improved quality. Vermonters with special needs, however, including children in low-income families and/or with chronic illness or disability, may need services beyond those covered by the state's uniform benefits package or traditionally provided through integrated delivery systems. In designing the new health care program, it will be important to identify these needs and consider how they can best be met. The health care plan outlined in the Authority's November 1, 1993 report raises several questions regarding health care for children, particularly those in poverty or with chronic health needs.

1. Questions Regarding the Scope of Benefits

With regard to the health care needs of Vermont children, the most fundamental question raised by the proposals of the Health Care Authority is: What services are missing from the HCA's Uniform Benefit Plan that are needed by children? At first glance, the Uniform Benefit Plan (UBP) appears to cover a broad array of preventive, primary, acute, and chronic care services. Further, the Health Care Authority states in its proposal that it does not intend to reduce Medicaid benefits for persons qualified for that program. However, on closer inspection, the HCA proposal does not provide enough detail to determine whether limits on the amount, duration and scope of coverage constrain the breadth or depth of coverage of various benefits. In addition, as Medicaid beneficiaries are integrated into ISCs over time, it is not clear exactly what services would be covered nor how they would be delivered or paid for. To further analyze this issue, we have broken down this question into several discrete subquestions, which are discussed below.

What is the scope of preventive care covered by the Uniform Benefits Plan?

While the HCA's uniform benefits plan (UBP) emphasizes clinical preventive care, such as immunizations and health screening (and would eliminate cost sharing for approved preventive services), the precise definition of what preventive care is covered is unclear. For example, will the scope of coverage of well-child services follow that which has been recommended by the American Academy of Pediatrics, or the somewhat more limited scope endorsed by the U.S. Preventive Care Task Force?

One option would be to have the UBP's preventive services for children mirror those specified under the Medicaid Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program. That program, which is very comprehensive in its scope and protocols, has been found not only to improve children's health status, but also to reduce children's overall health care costs (Keller, 1983). EPSDT is considered by many public health officials to be an especially appropriate benefit for low-income children who are usually at higher risk for illness, developmental delay, and other problems.

However, as state Medicaid programs continue to expand their coverage to families with higher incomes, many state policymakers have debated whether EPSDT standards unrealistically surpass what might be considered “mainstream” preventive medicine (Health Systems Research, 1993). For example, are requirements to perform such rigorous tests as the Denver Developmental 2 and to conduct universal age-appropriate blood lead testing at every screening encounter necessary, especially under an expanded program such as Dr. Dynasaur? Given that the HCA’s proposal will presumably link every child to a primary care “medical home,” a second option for Vermont policymakers would be to allow pediatric providers to use their discretion to render care in whatever manner, and according to whatever periodicity schedule, they deem appropriate.

To what extent does the Uniform Benefit Plan cover services that meet the intensive and chronic care needs of seriously ill or disabled children?

Children with chronic illness (such as diabetes or asthma) or those with disabling conditions (such as physical, vision or hearing impairments or epilepsy) require both extra primary care beyond that needed by average children and education in managing their long-term illness or disability. Many will also need additional services, such as case management, physical therapy or medical equipment. Similarly, children with mental illness and/or substance abuse problems may require long-term therapeutic and rehabilitative care.

As noted above, the Vermont Department of Health currently serves many of these children through its Children with Special Health Care Needs program (providing specialty clinics for children with conditions such as developmental delay, orthopedic, and metabolic disorders, case management services for special populations, and family support and respite care for parents of children with chronic conditions). Also, the State Office of Alcohol and Drug Abuse Programs and the Department of Mental Health and Mental Retardation provide both children and adults who need mental health and substance abuse care with a broad array of preventive, acute, and rehabilitative services. For each of these programs, Medicaid currently finances much of the care used by these special populations.

Research has shown that traditional managed care systems have not tended to provide such care for seriously ill and disabled persons (Batavia, 1993). Rather, these plans tend to offer coverage that is significantly limited in depth and/or duration. The Authority has acknowledged that Integrated Systems of Care will need to include in their primary care teams providers with special expertise in managing the care of children with chronic illness. However, the degree to which the HCA's Uniform Benefits Plan will cover services needed to meet the intensive, long-term needs of chronically ill children is unclear.

One option for the state would be to require that the UBP include a comprehensive set of services for children with special health care needs. Alternatively, Vermont could create for this population a separate, wrap-around benefit package to supplement the UBP. If the latter option were chosen, policymakers would still need to determine how these services would be financed and who would be responsible for delivering them. In its report, the Authority considered programs for children with special health care needs to be a form of long-term care, although they do include many acute-care services; nonetheless, the Authority did not include this population in its proposed long-term care program, but recommended continuing to care for them through public programs.

What extra psychosocial support services are needed by disadvantaged families with children?

Even when children and their parents have routine medical needs, many low-income families can make effective use of the health care system only when they are provided with an array of psychosocial "support" services such as outreach, care coordination (or case management), education, and/or home visiting services. Such assistance can also complement the delivery of health care services by linking families to critically needed social programs, including nutritional supplements, housing, counseling and transportation.

As currently drafted, however, the HCA's Uniform Benefits Plan appears to embrace a fairly traditional "medical" model of care. And while it has acknowledged the importance of health promotion and health education (noting, for example, that the ISC capitation rate would

include an adjustment for such activities), the HCA has not included in its UBP a number of supportive services that have been proven effective in helping disadvantaged families access needed care and attain better health status. Appendix A presents a detailed review of the research literature regarding enhanced services for high risk mothers and children. Summary highlights of this review are discussed below.

- Enhanced perinatal services, such as care coordination, risk assessment, nutritional and psychosocial counseling, and health and parenting education, have helped pregnant women obtain more frequent prenatal care and are associated with improved birth outcomes and lower cost (U.S. Public Health Service, 1989; Buescher and Ward, 1992; McLaughlin et al, 1992; Korenbrot et al, 1989). In the most conclusive example, women enrolled in North Carolina's "Baby Love" maternity care coordination program were found to give birth to fewer low- and very low-birthweight infants, were more likely to enroll their children in well-child care, and incurred costs that were \$277 lower, on average, than women not enrolled in "Baby Love" (Buescher et al, 1991).
- Particularly in rural areas, pregnant women who receive home visiting services have been found to utilize prenatal care more frequently and give birth to healthier infants. Successful home visiting programs have been characterized as providing nutritional advice, parenting education, psychosocial support and counseling, and a range of other services directly in a family's home (Heins et al, 1987; Olds et al, 1986 and 1993; Mayer, 1988).
- Many home visiting models have incorporated early intervention components to help improve the health status and developmental prospects of high-risk children. By focusing largely on the interaction and child-rearing skills of parents, these family-centered interventions have been found to be associated with higher rates of childhood immunizations, lower rates of accidents and child abuse, lower incidence and severity of developmental delays, higher IQ scores and lower rates of behavior problems, and improved confidence and satisfaction of parents (Larson, 1980; Resnick et al, 1987; Ramey et al, 1992; Rauh et al, 1988; Combs-Orme et al, 1985; GAO, 1990; OTA, 1988; Olds et al, 1988).

Following these examples, the vast majority of states--thirty-nine--have expanded coverage under Medicaid to include enhanced prenatal services for pregnant women. (In Vermont, the "Healthy Babies" program represents a recent effort to expand such care for pregnant women.) A small but growing number of states has also expanded Medicaid-funded perinatal care coordination/home visiting programs to include a postpartum component for families with high-risk newborns. Similarly, states such as Michigan have implemented impressive

programs to provide Medicaid-enrolled parents with high-risk children intensive, home-based early intervention and parenting education services (Michigan Department of Public Health, 1993).

As Vermont moves forward with health care reform, policymakers must determine how the issue of “support” services should be addressed in the context of the Uniform Benefits Plan. As in the preceding question, the state could expand the UBP by adding to it a carefully chosen set of nonmedical “support” services. A second option would be to provide these services to disadvantaged families via a wrap-around benefit package, delivered either directly by ISCs or through a separately funded categorical program.

2. Questions Regarding Service Delivery Systems and Providers

Offering health care services through ISCs provides an opportunity for both better care coordination and a focus on innovative ways to improve health outcomes. Nevertheless, because low income families have little experience using such organized plans, and providers in Vermont have little experience enrolling disadvantaged people into managed care, this new delivery arrangement raises many questions. Among them are determining what the role of the public providers that now serve many of these families will be within an ISC, who can become a primary care provider, what services can be obtained without approval of a primary care gatekeeper, and what care coordination strategies are most effective and efficient. Each of these questions is discussed below.

What will be the role of public and non-profit providers under health care reform?

Many of the services identified as important for low income families and children have traditionally been provided by public and non-profit provider entities, many of which exist in Vermont as in other states. For example, public health nurses employed in the 12 DOH District Offices provide some well-child care and an array of assessment and case management services to low income families. Two Community Health Centers serve Burlington and the northeast counties. Fifteen Planned Parenthood clinics are the primary entry point to health

care for a large fraction of adolescents and other low income people. There are 250 school nurses that serve every school in Vermont; in addition, the state AHS/DOE has received a grant to establish several comprehensive school-based clinics to provide primary and preventive care to a large share of adolescents in the schools of communities that want them. Finally, home health agencies are part of the Healthy Babies Coalitions in each of the state's districts and have been increasingly involved in providing home visiting services to pregnant women. A universal state health financing program that seeks to enroll all Vermonters into integrated delivery arrangements raises the question of what might be the role of providers that have traditionally served the poor and others facing barriers to care (Butler, 1993).

While all states confront the challenge of determining the appropriate role of public providers under health care reform, Vermont may find this issue somewhat easier to resolve. Because of its substantial commitment to children's health, financed through Medicaid/Dr. Dynasaur, the state relies primarily on private, not public, providers for preventive and primary care. Unlike states with a large number of local health departments and/or urban Community Health Centers that directly provide comprehensive services, most of Vermont's public providers render services that complement and supplement those provided by the private sector. Because there are not two competing systems of public vs. private primary care in the state, it seems likely that public and private providers can continue to work together within the framework of an integrated system of care. The extent to which separate delivery systems should be maintained for adolescents remains an issue for further analysis.

The Authority's November report acknowledges the need for providers with special expertise regarding both children's chronic illness and reproductive health and, indeed, recommends that providers such as Community Health Centers and family planning clinics should "be a part of" ISCs. However, such arrangements might involve contracts rather than direct control. The Authority did not discuss whether providers such as public health nurses should be explicitly part of ISCs.

Under a single payer model, an option that seems easily operationalized would be to include public and non-profit providers as members of geographically exclusive, non-competing ISCs. This would allow these providers to continue to provide specialized care and support to at-risk families and children with special health care needs, thereby augmenting the delivery of medical care by the private sector. The role of these providers becomes less clear, however, under a multi-payer system where health plans compete in at least some parts of the state. Under this scenario, the HCA might need to consider giving competing ISCs the flexibility to choose their own approach for serving special populations. For services the state did not want to maintain through a separate funding and delivery mechanism, ISCs could either undertake the function themselves (choosing whatever practitioners they deem appropriate to provide the care) or contract with specific providers (such as District Health Offices) for selected services.

The potential roles of various public and nonprofit providers are discussed in more detail below.

- **Local Health Departments.** As discussed in Section II, one of the strengths of the state's current delivery system is the partnership existing between local health department staff such as public health nurses and private pediatric and family practitioners. The importance and effectiveness of the outreach, psychosocial support, and care coordination services these practitioners provide is discussed in greater detail in the literature review in Appendix A. As the state moves ahead with health care reform, policymakers will have to consider several optional approaches to continue providing these services.

Given their somewhat limited primary care capacity, it seems clear that DOH's 12 District Health Offices will not be able to serve as "medical homes" within an ISC structure. However, the state may wish to retain their valuable contribution under a reformed system. One option would be to continue providing support services through the existing public health system, either by paying for it separately or by requiring ISCs to contract with DOH.⁵

⁵ In a study recently completed for the U.S. Agency for Health Care Policy and Research, Health Systems Research, Inc. examined local health department involvement in Medicaid managed care programs throughout the country. The study found that in six states (Alabama, Florida, Maryland, New Jersey, Pennsylvania, and Texas), HMO's or other at-risk entities subcontracted directly with local health departments to provide a range of preventive and primary care services, including prenatal and well-child care, case management, immunizations, and STD-related services. Further, the report discusses a recent mandate in the State of Oregon that will *require* prepaid health plans to contract with local health departments to provide immunizations, STD-related services, and communicable disease-related

Alternatively, the HCA could permit ISCs to provide these services directly, through whatever mechanism they think will best meet enrollee needs.

- ***Community Health Centers.*** Because one CHC in Vermont currently serves an underserved rural area and the other serves homeless people, it seems unlikely there will be any pressure to replace them with private sector providers. However, the state should assess whether these centers are currently capable of operating in a managed care environment. Because federally-funded Community Health Centers must, by law, provide comprehensive primary care services, their structure and service capacity should not preclude them from participating in managed care arrangements. Indeed, Community Health Centers in several other states are currently involved with managed care plans under both Medicaid and commercial insurance (Butler, 1993). These examples could serve as models for Vermont in developing contracting arrangements between these providers and Integrated Systems of Care. However, further analysis is needed to determine whether they might need improved data systems or other technical assistance.
- ***Planned Parenthood Clinics.*** Although the Uniform Benefit Plan is not explicit, it seems likely that ISCs will be expected to offer family planning services to enrollees, suggesting several possible roles for current family planning clinics. Like school clinics, these programs tend to serve a large number of adolescents who may be difficult to attract into traditional medical settings. Recognizing this important role in its November report, the Authority suggested that family planning providers should become a part of ISCs, for instance, through contractual arrangements, and emphasized the importance of coordinating services to avoid unnecessary travel among providers.

Once again, such involvement appears fairly straightforward under a single payer/noncompeting ISC model. However, the Authority did not discuss how these clinics should be integrated into competing delivery systems such as those envisioned in the multiple-ISC model. One option for the state would be to mandate competing ISCs to use family planning clinics to serve at least certain vulnerable populations. However, since ISCs will be held responsible for maintaining the health of their enrollees, they may prefer to retain the flexibility to develop an exclusive provider network that is not shared with other plans.

- ***School Health Providers.*** School nurses currently provide some primary care, particularly screening services, as well as health education and counseling. This traditional role could continue, even with the evolution of ISCs. However,

services. More commonly, however, LHDs are not enrolled as managed care providers, although often they are permitted to provide selected services (such as immunizations, health educations and counseling, transportation, and WIC) to managed care enrollees upon referral from the managed care plan's primary care providers (Bartlett and Appel, 1993).

development of more comprehensive school-based clinics raises the question of what their role should be in an integrated delivery system. Like planned parenthood clinics, school-based providers are likely to reach a population not easily persuaded to use traditional medical providers and thus could be funded as a delivery system entirely separate from other services. But consistent with its preference for care coordination, the HCA is likely to recommend that school clinics also become part of ISCs. As with family planning centers, this could be accomplished easily when a single ISC serves a region of the state. Once again, however, the contractual arrangements become more complicated if multiple ISCs compete within a region.

What providers can be primary care managers in an Integrated System of Care?

The HCA's November report describes primary care providers as the providers of first resort, responsible for providing directly much of the patient's preventive and primary care and referring out for other needed services. The HCA contemplates that primary care would be provided by teams within the ISC but does not make clear which practitioners should have lead responsibility to manage an enrollee's care. Physician generalists (family practitioners, pediatricians, internists, and obstetrician-gynecologists) traditionally perform that role in HMOs and other managed care arrangements. The questions remain: to what degree could public or non-profit agencies be primarily responsible as an enrollee's "medical home," and to what degree can non-physician ancillary practitioners serve as primary care case managers?

While the Department of Health's District Offices may not be capable of serving as families' "medical home," public health nurses under contract as employees of DOH could function effectively as part of a primary care team in order contribute their skills in assessment, education, and case management. Unless more fully trained in advanced clinical practice, however, they would probably not be appropriate as sole primary care managers. Providers with more comprehensive primary care capacity such as CHCs and future school clinics appear to be qualified as a medical home to manage a patient's care.

The role of family planning clinics is more complicated. According to Planned Parenthood staff, these clinics currently serve as the point of entry to primary and preventive care for many low income women and teens attracted to the confidential atmosphere and patient-sensitive

staff. These providers refer about one-quarter of their patients to other specialized care, counseling, and social services. Planned Parenthood clinics could be active participants in a primary care team, but because they do not provide comprehensive primary care, they are unlikely to be qualified to be a patient's medical home.

Which services should patients be able to obtain directly, without the prior approval of their primary care provider?

Within any Integrated System of Care network, one must assume that there will be mechanisms to manage and coordinate patients' utilization of care. Given budget limits and a capitated system, ISC networks will attempt to control utilization by requiring that *all* care be managed and controlled by the primary care provider. Such primary care case management, or "gatekeeping," has been a common element of managed care systems such as HMOs and PPOs.

However, Vermont policymakers could consider an alternative option. For especially sensitive services (such as family planning and prenatal care) and especially vulnerable populations (such as adolescents), they could place a higher priority on facilitating access than controlling utilization. That is, under a reformed system the state may prefer to allow certain persons to obtain certain types of care without the prior approval of their primary care provider. Such arrangements have been identified in a number of Medicaid managed care programs (Bartlett and Appel, forthcoming; AMCHP, 1993). For example, under the Maryland Access to Care (MAC) program (a Medicaid primary care case management program), pregnant women are permitted to obtain prenatal care whenever and wherever they wish, without the prior approval of their primary care case manager (Maryland Department of Health and Mental Hygiene, 1993). Medicaid officials in that state decided that access to prenatal care was a paramount priority and should not be subject to such access barriers.

If Vermont chooses the option of not requiring all care to be managed by the ISC's primary care provider, state officials will need to pay special attention to the implications this policy raises regarding coordination, lack of cost control, and the potential for over- and under-

utilization, especially in light of the HCA's emphasis on cost containment and improved quality through integrated service systems.

How can the delivery of care be integrated and coordinated most effectively and efficiently?

Several alternative approaches exist for integrating patient care, most of which are included in the concept of case management. In the context of managed care arrangements, for example, case management most often refers to a "gatekeeping" mechanism for controlling enrollees' utilization of care and granting prior approval before persons can obtain services other than those provided by their primary care practitioner.

However, in programs for high-risk children and pregnant women (such as Medicaid), case management is more commonly defined as a service that *facilitates* patients' access to needed health, education, and other social services. As cited above, perinatal care coordination programs such as "Baby Love" in the State of North Carolina have been shown to enhance women's and children's access to care and improve infant birth outcomes, while saving the Medicaid program money (Buescher, 1992). Further, as discussed in Appendix A, health services research has shown that family-centered case management can effectively improve the delivery of comprehensive services to children with intensive and chronic illnesses (Liptak and Revell, 1989).

As emphasized in its November report, the HCA has placed high priority on coordinating the delivery of services through Integrated Systems of Care. Yet the report does not specifically identify the mechanisms that will be used to achieve such integration. As systems evolve in the near future, policymakers must consider a number of options related to how case management might be effectively incorporated into ISCs. For example:

- Case management could consist of a simple gatekeeping function, residing within the purview of the primary care physician.

- Alternatively, case management could be defined more broadly to include a range of activities, such as risk assessment, plan of care development, linkage and referral, follow-up and monitoring.
- Finally, case management could remain the responsibility of a physician, or the service could draw upon other members of an ISC's primary care team, such as nurses, social workers, and other types of outreach workers.

The state may wish to implement different types of case management for different consumers. For example, a "gatekeeping" model may be perfectly appropriate for the "average" enrollee. However, a low-income family with a child who has, or is at risk of, serious illness may be better served by a more comprehensive, facilitative form of case management.

3. Questions Regarding Financing

The Health Care Authority's November report describes how its proposed single-payer system would be entirely publicly financed, with funds coming from income taxes, payroll taxes, and other broad-based revenues such as excise taxes. In contrast, the multi-payer system would be financed through a combination of public and private sources, including employer and employee contributions to the cost of premiums and state subsidies for selected individuals and small employers. However, in considering how to finance services beyond those offered under the Uniform Benefits Package, the state will need to explore other financing options, including increased use of federal Medicaid matching funds. It also needs to consider what payment arrangements are appropriate for public and nonprofit providers participating in ISCs.

How should the state finance services for disadvantaged children and families of CSHN not included in the Uniform Benefits Plan?

Earlier sections of this report discussed several categories of services needed by disadvantaged families that may not be covered for all Vermonters under the UBP. In considering alternative approaches to financing the delivery of this care, one option would be to pay for and deliver certain services through separate categorical programs. Alternatively, the state could hold ISCs



responsible for providing the care, but fund it with premium risk adjustments or supplemental payments. Financing could also differ by type of service. For example:

- Through the use of risk-adjusted premiums, ISCs⁶ could be required to provide the extra care needed by chronically ill children;⁷
- Services such as medical equipment or intensive counseling could be covered by a separate public program, such as the Children with Special Health Needs program,⁸ but closely coordinated with each child's primary care team by collaboration between ISCs and these special care providers, in keeping with the HCA's preference for integrated service delivery.

An advantage of retaining separate categorical programs is that the system could build upon the expertise and known quality of current providers and maintain a "social" rather than "medical" model of care. On the other hand, if a fair premium supplement could be calculated, the state could surrender this responsibility and make ISCs responsible for devising their own ways to provide all of these services. Some plans might contract with extant specialty providers while others would develop different delivery arrangements. Because plans have limited experience in serving disabled and other special needs populations and because of the incentives for underservice created by capitation, the state would still have to carefully monitor the quality and appropriateness of care being delivered by ISCs.

What payment arrangements are best suited for public providers participating in ISCs?

There are several possible means for paying public and non-profit providers for delivering services, including: cost-based fee-for-service payment (similar to the current policy for CHCs under Medicaid); discounted fee-for-service (the mechanism used by some managed care

⁶ The HCA contemplates risk adjustments but is not specific about what risks they would include or how finely tuned such adjustments could be, particularly in the short term.

⁷ Batavia (1993) notes that better information is needed on the real costs of people with certain disabling conditions, such as blindness and mental retardation, which may not be as costly as insurers may assert.

⁸ This report does not discuss the impact of the Americans with Disabilities Act of 1990, which restricts the ability of public programs to discriminate against people with disabilities, for instance in limiting benefits on the basis of "quality of life" factors. One analyst has suggested that a separate program for only the disabled might raise ADA problems. See B. Mahoney, "Breakthrough or Barrier? The ADA and State Health Reform." 1993 National Academy for State Health Policy, Portland, ME.

plans); and per capita payments. Different providers and different services might warrant different payment methods, as discussed below.

- ***Cost-Based Fee-for-Service.*** Although Medicaid has largely moved away from cost-based payment for most providers, Congress mandated under OBRA-89 that Community Health Centers and similar providers must be paid full reasonable costs because low Medicaid rates too often shifted the costs of Medicaid patients onto the federal grants designed to fund uninsured patients. Under health care reform, if most CHC patients are provided with a payment source and payments are adjusted to reflect patient health status, such cost-based payment arrangements would not seem to be necessary. Indeed, cost-based reimbursement would likely discourage managed care plans from contracting with CHCs.
- ***Discounted Fee-for-Service.*** Most HMOs pay some providers (physician specialists and sometimes primary care physicians) a negotiated fee for each service. This approach could be appropriate for services that are not predictable, such as specialty referrals, prosthetic devices, or equipment for a disabled child. Since this approach is inflationary, it would not be preferred for routine care. Further, experience has shown that many public providers, especially local health departments, are not always efficient third party billers. Therefore, fee-for-service arrangements may not be the optimal payment approach for these entities.
- ***Capitation.*** Increasingly, group, IPA, and network HMOs are paying primary care physicians on a per capita (“capitation”) basis for delivering preventive and primary care and referring to other sources of needed care. If a practitioner’s patient base is large enough to spread the costs of a few high users over many low users (or if stop-loss insurance covers excessive risk), this arrangement encourages providers to manage care cost-effectively without excessive risk. Unless other quality incentives exist, however, capitation can also encourage underservice. Since most public and non-profit providers are accustomed to serving an often unlimited population under a budget (which has even greater constraints on resource use), they would be likely to be able to provide assessment, case management, education, counseling, and other enabling services on the basis of an appropriately determined per capita payment.

How can Medicaid funds be used to finance broader coverage of disadvantaged families?

The Health Care Authority’s November report outlines a number of issues and action steps for the transition from the current to the reformed health care system. However, it does not provide extensive detail regarding what kind of transition will occur for the existing

Medicaid/Dr. Dynasaur program. In discussing how to finance universal access, the HCA does suggest that expanding Medicaid eligibility will provide an opportunity to extend coverage for certain populations, including pregnant women and children. Furthermore, the report estimates that 42,000 additional children could be enrolled under Medicaid if income eligibility limits were raised to 300% of the federal poverty level.

Beyond expanding eligibility for coverage, other opportunities may exist for financing under Medicaid the delivery of extra services for children and mothers in disadvantaged families. Several options are summarized below.

- The Medicaid statute allows states to cover targeted case management services for special populations. Vermont could, during the transition to a totally reformed system, offer targeted case management to children with special health care needs, for example, in order to capture additional federal financial support while also improving access and integrating the overall delivery of services to high-risk children.
- Under the broad authority granted by the EPSDT program, Vermont could extend to children a range of Medicaid-financed services not normally provided to adult populations. For example, like the states of Florida and Michigan, Vermont could craft a specialized benefit package for at-risk or high-risk children to cover services such as home visiting, child developmental assessment and early intervention, intensive family preservation counseling, personal care, physical, speech, occupational, and respiratory therapies, parenting education, and transportation.
- The Medicaid statute and EPSDT regulations also permit states considerable flexibility to define criteria for who may provide services to children. For example, to improve the state's ability to provide school-aged children with preventive screening, the state could develop protocols whereby school nurses serve as EPSDT screeners and/or case managers. Similarly, rules could be modified to permit independent practitioners (such as dental hygienists) to provide specific care (such as preventive sealants) to children in the school setting.
- Finally, Medicaid administrative funds could be used to support a broad range of initiatives, from enhancing EPSDT outreach and case management activities to placing on-line computer terminals in the state's twelve District Health Offices so that, using the new Medicaid MIS system, public health nurses could monitor and follow-up on treatment referrals for children.

During a transition period, such strategies would effectively bring additional federal funds to the state to support the delivery of critically important services. However, state officials should also be concerned about how these expansions of Medicaid coverage might lock the state into a “maintenance of effort” requirement under federal reform efforts. Further, policymakers also need to question whether, under a federally reformed system, federal funds will continue to be available for such enhanced care.

4. Questions Regarding Administrative and Management Functions

As outlined in the HCA’s report, health care reform based on either a single- or a multi-payer model, would create a new administrative entity to work with the Authority to perform a broad range of management functions. Specifically, the Health Care Purchasing Trust would, depending on the model selected, either directly carry out or oversee such administrative activities as eligibility determination, enrollment, provider payment, subsidy administration and claims processing. The Authority points out, however, that a long list of other agencies in state government will continue to retain various responsibilities for policy development, delivery and oversight of health care services. In this context, health care reform raises at least two key questions for the Vermont Department of Health. These questions are discussed below.

What administrative and management functions related to maternal and child health might be retained by the Department of Health under a reformed health care system?

In recent years and throughout the country, state Title V/Maternal and Child Health agencies have begun to shift their emphasis from directly providing care to serving as primary care systems planners, developers, and coordinators. In so doing, MCH programs have, to varying degrees across the states, been able to focus their energies on such critical activities as population-based needs assessments, health planning, policy development, and quality assurance.

In states such as Vermont, where there is a long and successful tradition of private-sector involvement in the delivery of health care services to disadvantaged populations, agencies in

the Department of Health have always been actively involved with such planning, administrative and managerial functions. Thus, it appears that the Department could retain a key role within a reformed health care system assisting the Health Care Authority in conducting community health surveillance and assessment, monitoring the performance and quality of health care providers and systems, developing standards and protocols for clinical practice, and assessing consumer satisfaction with health care delivery systems. Such a role might be especially appropriate in relation to planning and oversight of programs for low-income families and children with special health care needs.

As the HCA examines alternative administrative structures for the reformed system, it will be important to determine how the Department of Health can employ and build upon its strengths and expertise to support program management.

What data collection and management capacity do public and non-profit providers need to operate within a reformed health care system?

The Health Care Authority has emphasized the importance of rigorous collection of uniform data regarding utilization, cost, and outcomes. Such an emphasis naturally raises the question of how well public and nonprofit providers can respond to such demands. Recent experiences in several programs indicate that enhancing data capacity represents a significant challenge to such providers.

For example, since 1989, the federal government has asked state Title V/MCH agencies to annually provide detailed population-based health status, utilization, and cost data for its programs, both to increase overall accountability and to monitor progress toward the Surgeon General's Year 2000 health objectives. However, states have consistently had trouble meeting the new federal reporting requirements (AMCHP, 1993). Similarly, state Medicaid/EPSTD programs have experienced serious problems tracking and reporting accurate and consistent data regarding children's utilization of preventive and primary care services. In addition, the experiences of federally-funded Community and Migrant Health Centers that have become involved in managed care arrangements illustrate significant difficulties developing and

implementing the management information systems required by insurers and/or managed care organizations (Butler, 1993).

As health care reform proceeds in Vermont, it will be important to carefully assess the strengths and weaknesses of public health data systems and to develop a strategy for enhancing the overall data collection and reporting capacity of these systems.

C. Conclusions

The previous section identified a number of key questions regarding how health care reform may affect the populations served and the programs administered by the public sector, specifically, the Vermont Department of Health. In the context of the Vermont Health Care Authority's *Universal Access Plans* proposal to the General Assembly, this report has organized these questions into four groups:

- Scope of benefits;
- Service delivery systems and providers;
- Financing; and
- Administrative and management functions.

It is critical for Vermont policymakers to note, however, that these questions are, by their nature, interrelated. For example, one cannot consider alternative resolutions for a question related to the Uniform Benefit Plan's coverage of services, without also considering alternative strategies for structuring the service delivery systems that will render, and the financing systems that will pay for, those services. The consideration of these questions is made more complex by the fact that the Health Care Authority has proposed two alternative plans--both single- and multi-payer models--since policy options that make sense under one scenario may be less feasible in the other. Therefore, as Vermont moves ahead with health care reform, policymakers will need to employ a systems approach in analyzing and implementing policies to provide all Vermonters with access to appropriate health care services.



Given the preceding discussion, it may be helpful to synthesize the questions and alternative options that have been raised as follows:

- As Vermont moves forward with health care reform, policymakers will first need to determine what essential services for disadvantaged populations are left out of the HCA's Uniform Benefit Plan that need to be provided.
- Following this, policymakers will need to consider whether the UBP should be expanded to include these essential services (because all families might benefit from enhanced care), or whether it makes more sense to "carve out" extra services into a separate, wrap-around benefit package for disadvantaged populations. (This latter approach appears to be the one proposed by President Clinton in the recently released *Health Security Act*.)
- Having identified what services need to be offered to children and families with special needs, policymakers must decide who is best equipped to provide them--ISCs or some other service delivery mechanism.
- For either of these scenarios, policymakers will need to determine the most appropriate way of financing the delivery of these services. Possible approaches include using either risk-adjusted premiums or supplemental payments to support ISCs' provision of care, or maintaining a separate categorical grant to fund "wrap around" services. (Again, President Clinton's Health Security Act proposes a separate federally-funded program to finance services for children with special health needs not included in the Administration's comprehensive benefit package.)
- Under either of these scenarios, policymakers will need to consider the alternative roles that public and nonprofit providers can play, either as integral members of a single ISC or multiple ISC networks, or as separate, complementary delivery systems. Different solutions will likely present themselves for different provider types.
- Under both scenarios, policymakers will also need to consider the optimal approach for coordinating and integrating the delivery of services, given the multiple and diverse provider resources available in the state.

As noted in the introduction, the intent of this report has been to assess the strengths and weaknesses of Vermont's existing health care service delivery and financing systems for families and children, and then identify the key questions that are raised by the Health Care Authority's reform proposals regarding how systems of care could or should evolve. This report is not intended to answer these questions nor does it present a range of specific policy

options to address them. Rather, Health Systems Research, Inc. will consult with Department of Health officials to determine which subset of questions discussed in this report require further analysis. HSR will then proceed to develop a second, follow-up report that will analyze in more detail the implications and potential policy responses to these selected questions. Combined, these reports will provide officials in the Vermont Department of Health with assistance in determining how best to ensure that children and families, especially those with special needs, have access to appropriate care under the state's reformed health care system.

***Appendix A: A Literature Review of the Effectiveness of
Support Services for Mothers, Children, and
Children with Special Health Care Needs***

I. Introduction

In Vermont, as in the nation as a whole, the focus of health care reform has been on the organization and financing of medical care. However, for many high-risk groups, particularly low-income women and children, access to physician services will not necessarily guarantee better health. For these groups, comprehensive health and social services must be available to address the many social and environmental health risks that they face and to assure that they are aware of and can make effective use of preventive and primary care.

Many types of services have been tested across the country to address the needs of high-risk women and children, and many have been shown to be quite successful, in terms of both improving health outcomes and reducing costs. In general, these programs provide community-based, comprehensive care that addresses a full range of needs and risk factors. Many provide services in the client's home, relying on a variety of types of providers, from nurse practitioners to highly-trained and supervised lay health advisors. Particularly in rural areas, where providers may be scarce and transportation unreliable, these programs have proven crucial in providing services to underserved populations.

As we consider the particular needs of Vermonters and the strengths and weaknesses of existing systems in the context of health care reform, we must take into account the role these enhanced services might play in a reformed health care system. This section describes some of these programs that provide comprehensive services to high-risk pregnant women, infants, children, and children with special health needs (CSHN) and discusses the results of program evaluations.

This review summarizes only those evaluations whose methodology was determined to be sound. Studies were also omitted that were not sufficiently recent to be applicable to the current health care environment or that were conducted in settings, such as developing countries, that are not appropriate objects of comparison. Most of the studies described here are randomized controlled trials. This is the most reliable study design, as potential confounders are controlled for through the random assignment of participants to study and control groups. Several of these studies are retrospective cohort studies or other types of case-control studies; these are generally not as sound as controlled trials, but often use multivariate statistical analysis to control for some confounders. In each case, the study's design is mentioned with the summary of its results. In general, only those results that are statistically significant (according to the generally-accepted standard of $p < .05$) are cited; in the few cases where results that do not meet this standard are cited, their p-values are specified.

It is also important to note the preponderance of studies on perinatal interventions. This is an area where much research has been conducted, in part because of the relative simplicity of measuring pregnancy outcomes. However, the techniques used in these programs, including home visiting and other types of family-centered care, are equally applicable to the needs of high-risk children and their families. Many other studies cited here do measure the child health

and developmental outcomes of interventions that begin prenatally and continue through the child's first year or two.

II. The Need for Enhanced Services

In 1985, the Institute of Medicine's report *Preventing Low Birthweight* highlighted the need of all pregnant women for financial and logistical access to timely prenatal care and emphasized the appropriateness of the local health department as the site of comprehensive care for high-risk women (IOM, 1985). Since then, expansions of Medicaid eligibility levels provided a critical first step in assuring financial access to care for low-income pregnant women and their infants. As of January 1993, 33 states exceeded the federally-mandated eligibility level of 133% of the federal poverty guideline for pregnant women and infants. Vermont has been a leader in this effort, having expanded eligibility to pregnant women and infants as early as 1987, and now covering pregnant women through 200% of the federal poverty guideline and children through 225% (NGA, 1993).

However, financial access to services is not enough. For services to be effective, particularly for low-income populations, they must be accompanied by education, outreach and other strategies that address the particular health needs of their enrollees.

- The Rand Health Insurance Experiment (HIE), a randomized controlled trial, enrolled families across the country in a variety of different health insurance programs, some of them involving some level of cost-sharing and some providing care completely free of charge. Among children age 0-6 enrolled in free care, fewer than 60% received any immunizations at all during the three years of the study. Fewer than 75% of women of child-bearing age in the free-care group received even one Pap smear in three years. The authors concluded that although free care does improve the provision of preventive services, it alone is not enough to bring preventive care up to the recommended standards (Lurie et al., 1987).
- In 1985, before OBRA expansions took effect, the state of Massachusetts instituted Healthy Start, a program that provided eligibility for perinatal services to women up to 185% of poverty. In order to assess Healthy Start's impact on its enrollees' use of prenatal care and birth outcomes, evaluators used a "natural experiment" design, comparing these factors in uninsured women in 1984, before the program began, to those of uninsured women (including Healthy Start enrollees) in 1987, after the program had been in effect for a full year. The results were equivocal. Between 1984 and 1987, adequacy of prenatal care among uninsured women declined slightly; the rate of satisfactory prenatal care declined from 96.4% to 93.8%, and the proportion of uninsured women beginning care before the third trimester went from 98.0%

to 97.6%. Comparing those women who enrolled in Healthy Start with those who remained uninsured, the investigators found small but statistically significant differences in the rate of satisfactory prenatal care (90.3% vs. 83.6%), in the likelihood of initiation of care before the third trimester (94.2% vs. 92%), and in the rate of adverse birth outcomes (6.7% vs. 9.1%) that favored Healthy Start enrollees. However, it is impossible to determine whether these differences were due to selection bias (the fact that more healthy, motivated women enrolling in the program) or to the effect of the intervention (Haas et al., 1993).

III. Enhanced Perinatal Services

When eligibility expansions have been accompanied by enhancements in the services offered to Medicaid enrollees, health outcomes have improved. Many states have taken advantage of the opportunity provided by the Consolidated Omnibus Budget Reconciliation Act (COBRA) of 1985 to expand the breadth of services provided to pregnant women enrolled in Medicaid, although few have actually evaluated the effectiveness or cost-effectiveness of these expansions. Enhanced perinatal care, in general, provides a wide range of support services to low-income pregnant women, often including case management, risk assessment, nutritional services, health education, psychosocial support and follow-up, and referrals to other service providers, generally using nurses and other mid-level professionals in local health departments and community health centers. As of July 1992, 39 states had added case management and risk assessment to their Medicaid benefit package for pregnant women, 31 had added nutritional counseling, 32 had incorporated health education, 25 included psychosocial counseling, 33 provided home visiting services, and nine offered transportation to women enrolled in the program (NGA, 1992).

- In its 1989 report *Caring for Our Future: The Content of Prenatal Care*, the Public Health Service Expert Panel on the Content of Prenatal Care emphasized the need for risk assessment early in (and throughout) prenatal care and for tailoring prenatal services to women's health, social and psychological needs. The additional services that the Panel recommended for women at high social and psychological risk include home visiting and case management, along with specific interventions aimed at a woman's individual risk factors, such as smoking cessation services, domestic violence prevention, or drug treatment (U.S. Public Health Service, 1989).

Evaluations of enhanced service packages have tended to find improved birth outcomes among their enrollees, particularly those at especially high risk or who are likely to be responsive to intervention, such as adolescents and first-time mothers. For example:

- In Nashville, Tennessee, a group of pregnant women participating in a randomized controlled trial received comprehensive prenatal services from an interdisciplinary team, including nurse-midwives, social workers, paraprofessional home visitors, a nutritionist, and a psychologist, who provided psychosocial support, health education, and follow-up throughout the pregnancy. The evaluators performed separate multiple regression analyses to examine the effects of the program on birth outcomes for the experimental group as a whole and on those who were pregnant for the first time. For the treatment group as a whole, participation in the program was associated with increased use of prenatal care and greater prevalence of breast feeding, but not with increased birthweight. Among those women who were having their first birth, members of the experimental group did have higher average birthweights (by approximately 150 grams) than those who received standard prenatal services, although the incidence of low birthweight was not affected (McLaughlin, et al., 1992).
- In North Carolina, the Maternity Care Coordination program, known as “Baby Love,” provides care coordination, nutritional and psychosocial support, and referrals to pregnant women below 185% of the federal poverty level through local health departments. The program has been evaluated using a retrospective cohort design, using matched Medicaid and birth certificate data to compare the birth outcomes of women enrolled in Baby Love with those of other Medicaid recipients. The investigators found significant decreases in the rate of low- and very low-birthweight infants born to women in the Baby Love program compared to other women on Medicaid; infants born to women on Baby Love were 17% less likely to be of low birthweight (below 2500 grams) and 38% less likely to be of very low birthweight (below 1500 grams). In addition, the infants born to women in Baby Love experienced a 19% lower mortality rate (Buescher et al., 1991).

Moreover, Baby Love serves as an effective link to other health and social services for Medicaid women and their children. According to data from the North Carolina State Center for Health and Environmental Statistics, women in Baby Love are 18% more likely than women on Medicaid alone to be enrolled in WIC, 36% more likely to receive a postpartum exam, 63% more likely to enroll their children in well-child care, and 51% more likely to enroll their children in WIC (Hill, 1993).

- North Carolina’s Baby Love program is cost-effective as well. According to the study cited above, the cost of births to women on Medicaid that were not enrolled in Baby Love was \$277 higher per birth than those in the Baby Love program; the state saves \$2.02 in Medicaid costs for each dollar spent on the care coordination program (Buescher, et al., 1991).

- WIC, the Special Supplemental Food Program for Women, Infants, and Children, is another example of enhanced prenatal services that have had a positive and cost-effective impact on birth outcomes. WIC provides nutrition education, food vouchers, and health care and social service referrals to low-income pregnant women. The U.S. Department of Agriculture commissioned an evaluation of these prenatal services, which used a retrospective cohort design and regression analyses to examine the costs and birth outcomes of WIC participants compared to those of nonparticipants who were enrolled in Medicaid in North Carolina, South Carolina, Texas, Florida, and Minnesota. The study found that the WIC mothers and their newborns had Medicaid costs that were \$277-\$598 lower than those of the women who did not participate in WIC. Moreover, the infants born to WIC-enrolled women were, on average, 51 grams (in Minnesota) to 117 grams (in North Carolina) heavier than those born to Medicaid women who did not receive WIC. For premature births (those of less than 37 weeks' gestation) the increase in birthweight associated with WIC was even larger, ranging from 138 grams to 259 grams (USDA, 1990).
- Two programs in California have attempted to address high rate of low birthweight among low-income women through the provision of comprehensive prenatal services. The first, a pilot program in 13 counties conducted from 1979-1982 called the OB Access project, provided a package of prenatal services including psychosocial and nutritional assessments, counseling for any risks identified, and perinatal health education (including childbirth and parenting education), along with routine prenatal services. An evaluation of this pilot compared the outcomes of enrollees with Medicaid-paid births to women who were not enrolled in OB Access, matched for race/ethnicity, age, parity, plurality and sex of infant, and county of residence. This evaluation showed a 33% lower low birthweight rate and a 61% lower rate of very low birthweight for women enrolled in the OB Access project (Korenbrot, 1984).

Partly in response to these results, the project was then expanded into the statewide Comprehensive Perinatal Services Program (CPSP), involving approximately 200 provider sites. Like OB Access, CPSP provides all routine obstetrical services; case coordination; nutrition, health education, and psychosocial assessment and services; prenatal vitamin supplements; and referrals to other needed services. In evaluating CPSP, investigators compared the birth outcomes of its participants with those of a random sample of non-participant births to Medicaid women. The study found that fewer CPSP women started prenatal care in the first four months than did other Medicaid women (65% vs. 70%), but a greater proportion of CPSP enrollees received more than 80% of expected visits (78% vs. 63%). When the low birthweight

rate of all CPSP women was compared to that of the Medicaid group, no statistically significant difference was found. However, the low birthweight rate among those CPSP women who received at least a “basic” amount of care (at least eight prenatal visits, complete assessments and a prescription for vitamins) was significantly better than that of non-enrolled Medicaid women who received at least eight prenatal visits. The evaluators thus conclude that it is the content of prenatal care, not the amount, that helps to improve birth outcomes for high-risk women (Korenbroet et al., 1993).

- Case management has also been shown to be effective in improving the birth outcomes of pregnant adolescents. Participants in San Francisco’s Teenage Pregnancy and Parenting Program (TAPP) receive coordinated medical, educational, nutritional and social services along with individual case management. When compared with the birth outcomes to adolescents in San Francisco before the establishment of TAPP, their rate of low birthweight was significantly lower (8.1% vs. 12.0%), and their infants’ mean birthweight was an average of 114 grams higher, after controlling for differences in race, infant sex, parity, age, and number of prenatal care visits. Those who made the greatest use of the program’s services showed the largest effect on birthweight. However, this result may be due to selection bias, as the healthiest, most motivated participants may have been the most likely to use the program’s services effectively (Korenbroet et al., 1989.)

Another factor in the provision of enhanced services to high-risk pregnant women is the level and training of the providers who serve these groups. Several studies have demonstrated the appropriateness of using mid-level practitioners, rather than obstetricians, to provide prenatal care to women with socioeconomic (rather than medical) risk factors.

- A randomized controlled trial in South Carolina assigned a group of women at high risk for low birthweight (but without medical or pregnancy complications) who came to public health departments for prenatal care to receive services from nurse-midwives, while the control group received standard prenatal care for high-risk pregnancies from obstetricians. Those in the experimental group saw their provider at one- to two-week intervals, with visits lasting 20 to 30 minutes each; those in the control group had less-frequent, shorter prenatal visits. No statistically significant effect was seen on birth outcomes, except for a reduction in the rate of very low birthweight among very high-risk black women. However, there was no disadvantage evident in nurse-midwives’ providing prenatal care to high-risk women (Heins et al., 1990).
- In North Carolina and Kentucky, before the initiation of Baby Love, the birth outcomes of women who received prenatal care in public health departments

were compared to those of women on Medicaid who received care from other providers, using a retrospective cohort design and matching Medicaid paid claims files to birth certificates and public health department client records. Public health departments provided comprehensive prenatal care, using such providers as nurse practitioners, nutritionists, and health educators. To examine the effects of these more comprehensive prenatal services on birth outcomes, logistic regression was used to compare birth outcomes for Medicaid women who used public health department prenatal services versus those Medicaid recipients who got prenatal care from other sources (excluding those who received no prenatal care) controlling for such factors as age, marital status, education, previous birth outcome, and adequacy of prenatal care. In both states, infants of women who received their prenatal care outside public health department were from 13% to 223% more likely to have low or very low birthweight births, depending on the state, the woman's race, and the birthweight category, than were Medicaid women who used the health department's more comprehensive services (Buescher and Ward, 1992).

One service that has shown particular promise for provision of effective prenatal services to low-income, high-risk pregnant women is home visiting. Given the broad range of barriers that can stand in the way of a family's receipt of needed care--financial, cultural, structural, educational, and logistical--an increasing number of providers and policymakers have embraced the notion that providing care directly in families' homes can be an effective alternative service delivery strategy. By providing nutritional advice, parenting education, psychosocial support and counseling, and a range of other services, home visitors can offer critical assistance that may help women give birth to healthier babies. Similarly, by performing risk assessments and making appropriate referrals to other care-givers, home visitors may act as case managers by overseeing the development and implementation of a plan of care for pregnant and parenting patients. Evidence of the growing popularity of home visiting services can be seen in the fact that, since 1987, twenty-four states have added the service as a reimbursable prenatal and/or postpartum benefit within their Medicaid programs (Hill and Bennett, 1990). These programs have taken a number of different forms, and use various types of providers to perform the home visits, from nurse practitioners to highly-trained lay people.

In general, evaluations of home visiting programs have shown that the strategy contributes positively to a number of improved outcomes for recipients. Particularly in rural areas, pregnant women who have received home visiting services have been found to make better use of prenatal care and give birth to healthier infants. Summaries of selected specific evaluations of home visiting projects appear below.

- In rural upstate New York, a population of low-income, unmarried, or adolescent mothers was randomly assigned to receive comprehensive prenatal

and postpartum nurse visitation services. During the prenatal period, educational information was provided on fetal and infant development, parenting, weight gain, smoking cessation, hazards of alcohol use, signs of pregnancy complications, exercise, hygiene, and development of a more extensive support network. Nurses also linked clients with community-based health and social services.

Among the findings of this study was the fact that women who received these home visiting services, compared to a randomly-assigned control group, attended childbirth classes more frequently, made better use of WIC services, experienced greater dietary improvements, and reported that their babies' fathers became more interested in their pregnancies. While no overall impact on birth outcomes was seen, the study did find that higher-risk women, particularly young adolescents and smokers, benefitted the most from program services. Adolescents' newborns were an average of 395 grams heavier, and women who smoked exhibited a 75% reduction in the incidence of preterm delivery, when compared to control groups (Olds et al., 1986).

- In rural South Carolina, the Resource Mothers program sends nonprofessional women to visit pregnant adolescents in order to provide support throughout pregnancy and the infants' first year of life. Following highly structured protocols, Resource Mothers teach women about pregnancy, labor and delivery, family planning, proper nutrition, risk reduction, infant stimulation, and well-child development, and often provide mothers with transportation to clinic and other ancillary providers. Participants in the Resource Mothers program were recruited through schools, health departments, other health care providers, and other community agencies, and through community educational forums. (Since all participants enrolled in the program voluntarily, selection bias is a threat to the validity of the evaluation.)

Compared to a group of matched controls, women who participated in the Resource Mothers programs were found to have significantly lower rates of inadequate prenatal care, defined as having had fewer than five prenatal visits or entering prenatal care after the sixth month of pregnancy (18.3% versus 35.9%), small-for-gestational-age infants (4.9% versus 9.8%), and low-birthweight infants (10.6% versus 16.3%) (Heins et al., 1987).

- High-risk pregnant women in eleven Michigan communities were targeted to receive prenatal home visiting services from county public health nurses under the Infant Health Initiative Project (IHIP). Two quasi-experimental evaluation designs both found that these services were effective in improving pregnancy outcomes. Mean birthweight of IHIP pregnancies was found to be significantly

higher and infants born to IHIP mothers experienced both longer gestation and higher Apgar scores (Mayer, 1988).

- A recent review of the evaluation literature on perinatal home visiting programs concluded that the following five features characterize the programs that were most successful in achieving their objectives: home visits began prenatally; the visits were carefully structured, with the interventions tailored to the needs of the families; the visitors themselves were well-trained and supervised; the services were designed to address the needs of populations that are hard to reach with center-based services, such as adolescents and abusive parents; and the visits helped to link families with the other medical and social services they need, both by informing women about the availability of these services and by serving as case managers (Mayer et al., 1992).

Although little research has been done on the cost-effectiveness of home visiting programs, those studies that do address this issue report favorable results. For instance:

- The home visiting program in rural New York showed significant cost savings to the medical and social service systems. Two years after the end of the intervention, it was calculated that provision of home visiting services to low-income women saved the government \$180 per client (after accounting for the cost of program services). The vast majority (82%) of the savings was found in reductions in AFDC and Food Stamps payments; the remaining 18% was in reductions in Medicaid and Child Protective Services expenditures and in increased tax revenues due to the women's greater likelihood of rejoining the paid work force (Olds et al., 1993).

IV. Enhanced Services for Children at Risk

The provision of acute care and clinical primary and preventive services for children is an area in which Vermont has demonstrated commitment and leadership, so these services are not a focus of this review.¹ However, enhanced services can help low-income and other high-risk children to receive the primary preventive and acute care services they need.

¹ The evidence of the effectiveness and cost-effectiveness of these services, however, is by no means clear. The U.S. Office of Technology Assessment, in its review of the literature on the effectiveness of well-child care, found strong support only for the effectiveness of immunization (OTA, 1988). Other services that have been shown to be effective include newborn screening, early attention to middle ear infections, and treatment for chronic conditions such as asthma, diabetes, and epilepsy (U.S. Preventive Services Task Force, 1989; Hubbard et al., 1985; Starfield, 1985).

It is widely acknowledged that low-income children are at especially high risk for a number of conditions, including lead poisoning, delayed immunization, inadequate dental care, and asthma, and experience greater severity of many more, such as appendicitis, impaired vision, and anemia. Poor children are also at increased risk of mortality from both diseases and injuries (Starfield 1991). Infants who are premature or low birthweight are at high risk for developmental delay, and their parents are often unprepared for the stress of taking care of a fragile infant (Resnick et al., 1987).

One program that attempts to address the risk factors experienced by low-income children is the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program, which provides preventive, developmental, and acute care services to children enrolled in Medicaid. With the Omnibus Budget Reconciliation Acts of 1989 (OBRA-89), the federal government expanded this program to involve more providers, cover more treatment services, and make the program more accessible to potential enrollees. Although few formal evaluations have been done of the new features of EPSDT, a survey and analysis by the National Governors' Association concluded that EPSDT programs were most successful when their services were well coordinated outside the Medicaid system, and when they included a strong case management component for children who required intensive services (Hill and Breyel, 1991).

- One evaluation of EPSDT conducted in 1983 (before these expansions) showed that the program did produce improvements in children's health. The author found that the longer children participated in the EPSDT program, the fewer referrals they received at their screening visits; that is, their health appeared to improve over the course of their enrollment in the program. Moreover, the cost of medical care for EPSDT participants was significantly lower than for non-participants, even when the cost of the EPSDT program itself was taken into account. The author of this study acknowledged its methodological limitations, however: that a longitudinal randomized trial was impossible and the cross-sectional design used the number of rescreenings received as a proxy for the amount of time spent in the program (Keller, 1983).

Many other successful programs have been implemented that aim to improve the health status and developmental prospects of high-risk children, teach child care and interaction skills to their parents, and prevent child abuse. Commonly, these programs include home visitation services along with early intervention in the hospital. For home visiting to improve the health of these children, according to one review of the evaluation literature, a program must use an "ecological model" of the causation of developmental problems. That is, the program must address the needs of both the parents and the child, and must take into account the environmental factors that contribute to those needs. Moreover, for a home visiting intervention to show success, it must be targeted toward those families that are at greatest risk, and the visits themselves must be long and comprehensive enough to address the variety of the family's needs (Olds and Kitzman 1990). Evaluations of several such programs are described below.

- A multidisciplinary early intervention program was tested by the Frank Porter Graham Child Development Center in North Carolina. In this study, 377 low-birthweight, premature infants were randomly assigned to an experimental group whose members received four types of services: pediatric follow-up and referral; home visits to provide support, training and education to parents; parent support groups; and child development centers. A control group of similar low birthweight, premature children received only the pediatric follow-up and referral services. At age three, the children in the experimental group whose families made the most use of the program's services were much less likely to have IQs below 70 (1.9% among those in the highest participation tercile, compared to 3.5% and 13% in the middle and lowest participation terciles, respectively.) Parents assigned to the experimental group were 18% less likely to report that their children had behavioral problems than were those in the control group (Ramey et al., 1992).

- In Montreal (where all citizens have access to medical care), a randomized controlled trial assigned working-class families to one of three groups. One received home visits beginning prenatally, one received home visits beginning 6 weeks postpartum, and one received no visits. The prenatal home visits were intended to review the mother's preparations for a new baby and to educate her about what to expect at and after delivery; the postpartum visits dealt with general caretaking, parent-child interaction, social status, and child development. The groups that received home visits had a lower accident rate (.86 accidents per child in the prenatal home visiting group versus 1.55 per child who received no visits), and were more likely to have up-to-date immunizations at 12 and at 18 months of age (at 12 months, 93% for the prenatally-visited group, 87% for the group that received postpartum visits only, and 70% for the control group; at 18 months, 88%, 78%, and 76%, respectively [$p < .10$]).

In addition, the home visitors observed fewer problems among the families whose visits began prenatally (Group A) than among those whose visits began after birth (Group B). Ten percent of Group B families had "significant feeding problems" at 12 months, compared to none among Group A families; at 15 months, these proportions were 5% and 1%. At 12 months, 5% of Group B children experienced sleep problems, compared to 1% of Group A children. Finally, the rate of "nonparticipant fathers" was greater among Group B families at 12 and 15 months (11% vs. 3% at 12 months, and 6% vs. 1% at 15 months), and the rate of "mother-infant interaction problems" followed the same pattern (8% vs. 2% at 12 months, and 5% vs. 1% at 15 months) (Larson, 1980).

- In Florida, infants in neonatal intensive care were randomly assigned to either a traditional care setting or a multidisciplinary infant development program (IDP). During twice-monthly home visits up to the age of two, early childhood development experts worked with infants to enhance their personal/social, visual, auditory, language, memory, perceptual/motor, and physical development. These visitors also worked with parents to counsel them on child rearing skills and to help them with any barriers encountered in receiving health care services. Children receiving IDP services experienced a significantly lower incidence of developmental delay (4% versus 26% at age two) and scored significantly higher, on average, than the control group on mean mental and physical indices at ages one and two (Resnick et al., 1987).
- A Baltimore program provided home visits to randomly-selected inner-city families to test their effect on their use of well- and sick-child care, hospitalization rates, child abuse rates, and health care costs. A trained lay practitioner visited the women in the study group, all of whom were at least 18 years old, black, and poor, and used the city's Title V Children and Youth program. At least ten visits were conducted in each child's first two years, beginning seven to ten days after birth and occurring periodically before each regularly-scheduled well-child visit. The visitor provided education appropriate for the age of the child on issues such as child health care, feeding, safety, and development, and encouraged mothers to keep well-child appointments.

Compared to the randomly-assigned control group, children in the experimental group made fewer total outpatient visits during the study period. However, study group children were more likely to comply with the recommended schedule of preventive visits for their age (88% vs. 69%), were less likely to delay preventive care (6% vs. 14%), and were far less likely to have repeated or chronic ear infections (21% vs. 55%). There were only two instances of suspected child abuse in the experimental group, compared to 13 among the controls. Those in the control group were more than twice as likely to be hospitalized during the study period (Hardy and Streett, 1989).

- In a study conducted by a Columbia University researcher, neonates born weighing less than 2,200 grams and before 37 weeks of gestation hospitalized in intensive care units were randomly assigned to either a control group or an experimental group that received eleven 1-hour sessions with a nurse (seven during the week prior to hospital discharge and four in the family's home during the first 90 days after discharge). The visits aimed to help mothers with skills necessary to care for a low birthweight infant and with stimulating child development.

At the conclusion of the four-year intervention, not only did mothers report greater self-confidence (with scores 15% higher than the control group mothers) and more favorable perceptions of infant temperament when compared to mothers in the control group (rating their infants as 72% less difficult), but infants receiving the intervention also scored 9-12% higher on infant development tests at both 36 and 48 months, with the scores of infants in the experimental group equaling those of normal birthweight infants (Rauh et al., 1988).

- In 1977-78, Colorado's Parent-Infant Project provided weekly to biweekly home visits beginning in the second trimester to low-income women who are having their first or second pregnancy, with the goals of improving the quality of interaction between the women and their infants and increasing their use of child health services. The visits continued until the child's first birthday. The program's evaluation, conducted using a randomized controlled trial, showed no difference birth outcomes or use of well-child services between the experimental and the control groups but did show that home-visited women brought their children to the health department for an average of approximately 1.5 more sick-child visits over the study period than did control families. This difference was concentrated among those mothers who demonstrated high levels of family stress. In addition, home-visited mothers were more likely to make use of community resources generally. The study also showed improved mother-infant interaction and less authoritarian attitudes toward child rearing when the children were a year old. However, no difference in the rate of child abuse was evident (Dawson et al., 1989).
- Similar positive findings in early childhood development have been documented by several additional studies of home visiting for premature, low birthweight, and malnourished infants (Ross, 1984; Grantham-McGregor et al., 1987). One randomized controlled trial conducted in Kingston, Jamaica found that home visiting services provided on a more intensive level--weekly versus bi-weekly or monthly--were more successful in achieving their goals regarding children's hearing, language and overall mental development (Powell et al., 1989). Others have shown improvements in the health knowledge and attitudes of high-risk mothers, which can improve the health and development of their infants (Combs-Orme et al., 1985).
- The effects of home visiting programs can continue long after the visits have ended. The U.S. General Accounting Office reviewed the results of a Michigan program that provided home visits and center-based services to low-income 3- and 4-year-olds and their families, and found that children randomly assigned to this program performed better on standardized tests and IQ assessments, and placed a higher value on education than a control group of

similar students. Even at age 19, program participants were more likely to be literate (approximately 60% vs. 40%) and employed (50% vs. 30%) or in college or vocational school (40% vs. 20%), and less likely to have dropped out of school (30% vs. 50%) (Schweinhart and Weikart, 1988).

Another effect of home visiting and other enhanced services for high-risk families is the prevention of child abuse and neglect. The U.S. Office of Technology Assessment reviewed the literature on the effectiveness of home visiting programs in child abuse prevention and found that four of the five programs they examined had been shown to be effective. The OTA concluded that successful programs had four common features: home visitors reached parents who may not trust or have access to formal service providers; their observation of the home environment provided more accurate information about the risks that children face; they were able to refer families to other services; and they served "as a visible and regular reminder to services; and they served "as a visible and regular reminder to parents that excessive punishment and neglect of children in our society are not tolerated" (OTA, 1988). For instance:

- In the rural upstate New York trial cited above, home visiting was found to have a direct impact on rates of child abuse and neglect. Of those who did not receive home visits, 19% mistreated their children, compared to 4% of those who received home visits through the child's second year. In their second year of life, children who received home visits had 32% fewer emergency-room visits than children in the comparison group, due largely to a reduced likelihood of injuries and poisonings (Olds et al., 1986). Positive effects of the program were also experienced by the parents of at-risk children--low-income, teenage, or unmarried mothers receiving home visits were shown to return to school more rapidly, experience more months of employment, fewer subsequent pregnancies, and more success postponing the birth of a second child than did similar mothers who did not receive such care (Olds et al., 1988).

Here again, little is known about the cost-effectiveness of these services. However, there is evidence that home-based services for high-risk infants and children can save money in direct health care costs.

- In a randomized controlled trial in a hospital in Philadelphia, some low-birthweight infants were discharged from the hospital early if they met certain criteria, and were given home follow-up care during the first week and at 1, 9, 12, and 18 months. The visits were conducted by nurses and included health and developmental screenings, an assessment of parents' coping and child-care skills, and instruction and counseling regarding the care and stimulation of the infant. Nurses were also available by phone. The infants in the experimental

and control groups experienced similar numbers of re-hospitalizations and acute care visits, but the early-discharge infants had total physician and hospital costs that were 26% lower than those of the control group. After subtracting the costs of the home visiting and on-call nursing services, the program still produced an average savings per child of \$18,560 (Brooten et al., 1986).

- The Baltimore study described above assessed the relative cost of health care for its intervention and control populations, and compared the difference to the cost of the home visiting intervention itself. The authors found that children in the experimental group incurred health care costs of \$27.31 less per month than those of the control children, for a total in averted costs of more than \$85,000. This was offset by program costs of approximately \$60,000 for the 24-month intervention (Hardy and Streett, 1989).
- In the home or in a clinic, pediatric nurse practitioners can provide care that is more cost-effective and often more comprehensive than that of physicians. Research has found that private pediatricians spend, on average, between seven seconds and one and a half minutes counseling and educating parents on child health and development. Nurse practitioners, whose time is far less expensive, spend more time providing this anticipatory guidance, and tend to give parents more opportunity to express their concerns (Perrin et al., 1992).

V. Children with Special Health Needs

Children who have diagnosed conditions that require special treatment, such as chronic illness and disability, represent a population of special concern to policymakers. For this group as well, medical care alone may not be enough to provide for all of the child's, and the family's, complex needs. Indeed, many state programs for children with special health needs (CSHN) have been criticized in recent years for focusing too narrowly on high-tech medical care for these children, at the expense of meeting their need for more basic primary and preventive care.

Case management can help to identify and refer families to providers of various services. Physicians, however, are not always the most effective case managers. A survey of parents of children with chronic illness and their physicians, who also provided case management, found that physicians' and parents' perceptions of families' needs were very different. Physicians underestimated parents' need for information about the child's diagnosis, treatments, and prognosis, and overestimated their need for financial and vocational information. Lack of clear communication between the case manager and the family can seriously compromise the effectiveness of case management (Liptak and Revell, 1989).

Once again, successful programs are characterized by comprehensiveness of services and involvement of the parents in the care of the child.

- A meta-analysis of 31 evaluations (some randomized controlled trials, some matched-pair designs, and some pre/post comparisons) of early intervention services for disabled children under three years of age found that, overall, the programs were moderately successful in promoting the development of young children with biologically-based disabilities. Particular elements that distinguished the most effective programs were high levels of parent involvement and a well-defined curriculum (Shonkoff and Hauser-Cram, 1987).
- Advocates of family-centered services for children with special health care needs point out that it is the parents, not the physicians, who are the constant in the life and care of the child. Therefore, services for these children should be family-based, and parents should be the primary caregivers and case managers. Services provided to these families should take place at home or in a similarly convenient location, and should be comprehensive, addressing family's need for emotional and social support as well as the child's need for medical care. Referrals to respite programs and parent support groups, for instance, have been shown to be effective in reducing stress and helping parents to care for their children at home, which is both more cost-effective and more satisfying for the family. In addition, several studies have shown that parental support programs improve the developmental status of the children and the function of the family (Association for the Care of Children's Health, 1987).

VI. Services for Adolescents

Adolescents, as a group, are exposed to a multitude of risks, from substance abuse to pregnancy and sexually transmitted diseases to injury. To address these risks, teens need services that address both their physical and behavioral health, in a setting in which they feel comfortable and safe. The current, fragmented health care system may even work in their favor in this respect, as the multiplicity of providers may allow them to receive sensitive services--family planning, drug and alcohol treatment, treatment for sexually transmitted diseases--without their parents' knowledge. In a unified system, it may be difficult for adolescents to maintain their confidentiality and to receive services from providers other than those used by their families.

One option to promote confidentiality is to provide alternative sources of care, aimed at adolescents, in a setting in which they will feel comfortable. School-based or -linked clinics, for instance, aim to provide comprehensive health care to teenagers, and could continue to

serve as a source of confidential services in a reformed health care system. The effectiveness of these clinics, however, is only beginning to be evaluated.

- In its report *Code Blue: Uniting for Healthier Youth* the National Commission on the Role of the School and the Community in Improving Adolescent Health recommended that adolescent health centers be established in schools and other locations convenient to teenagers, and that public health and other direct services targeted at adolescents be expanded. Only if services are organized around the needs of adolescents, the Commission argued, will their health improve.
- An analysis of the services of six comprehensive school-based clinics nationwide found that from nine to 38 percent of visits were for reproductive health care. The availability of family planning counseling and services at the clinics varied, but in no case did the services of the clinics increase the frequency or hasten the onset of adolescent sexual activity. The clinics were effective in encouraging the use of condoms and other methods of family planning only to the extent that they emphasized these aspects of their services (Kirby et al., 1991).
- The Center for Population Options surveyed 143 school-based clinics about the services they provided during the 1987-88 school year. They reported that 89-94% of the 94 clinics that responded offer such basic medical services as general primary care, immunizations, general, sports and work physicals, and diagnosis and treatment of minor injuries. Contraceptive counseling and pregnancy testing are offered by 85% and 88% respectively, and 78% offer gynecological screening and treatment for sexually transmitted diseases, but only 12% actually dispense birth control supplies (Koppelman et al., 1989).
- A study by the Robert Wood Johnson Foundation of school-based approaches to adolescent health care found that more than 70% of parents provide consent for their children to use the clinics; 45% of students at schools with clinics use the centers, with an average of 4 visits per year per student; and that school-based clinics increase access to care for those who have not seen a physician recently or who do not have access to a regular provider. Most clinics surveyed in this project provide comprehensive health services and health education (Lear, 1993).

VII. Conclusion

Many of the successful programs described here contain several common elements. One component that appears in nearly every program, whether explicitly or not, is case management

to integrate health and social services for clients. Whether clinic-based or home visitors, case managers focus on both parents and children, and their services have been shown to improve children's health and development.

In addition, these studies show that enhanced services are often best delivered by mid-level practitioners, whose training and orientation are more appropriate to the comprehensive nature of these services. By taking advantage of the skills and training of these providers in both the public and the private sectors, health care reform can offer not only access to medical care for all Vermonters, but also access to services that will contribute to better health for the state's women and children.

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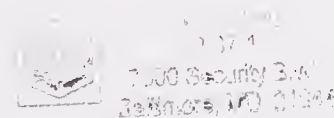
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